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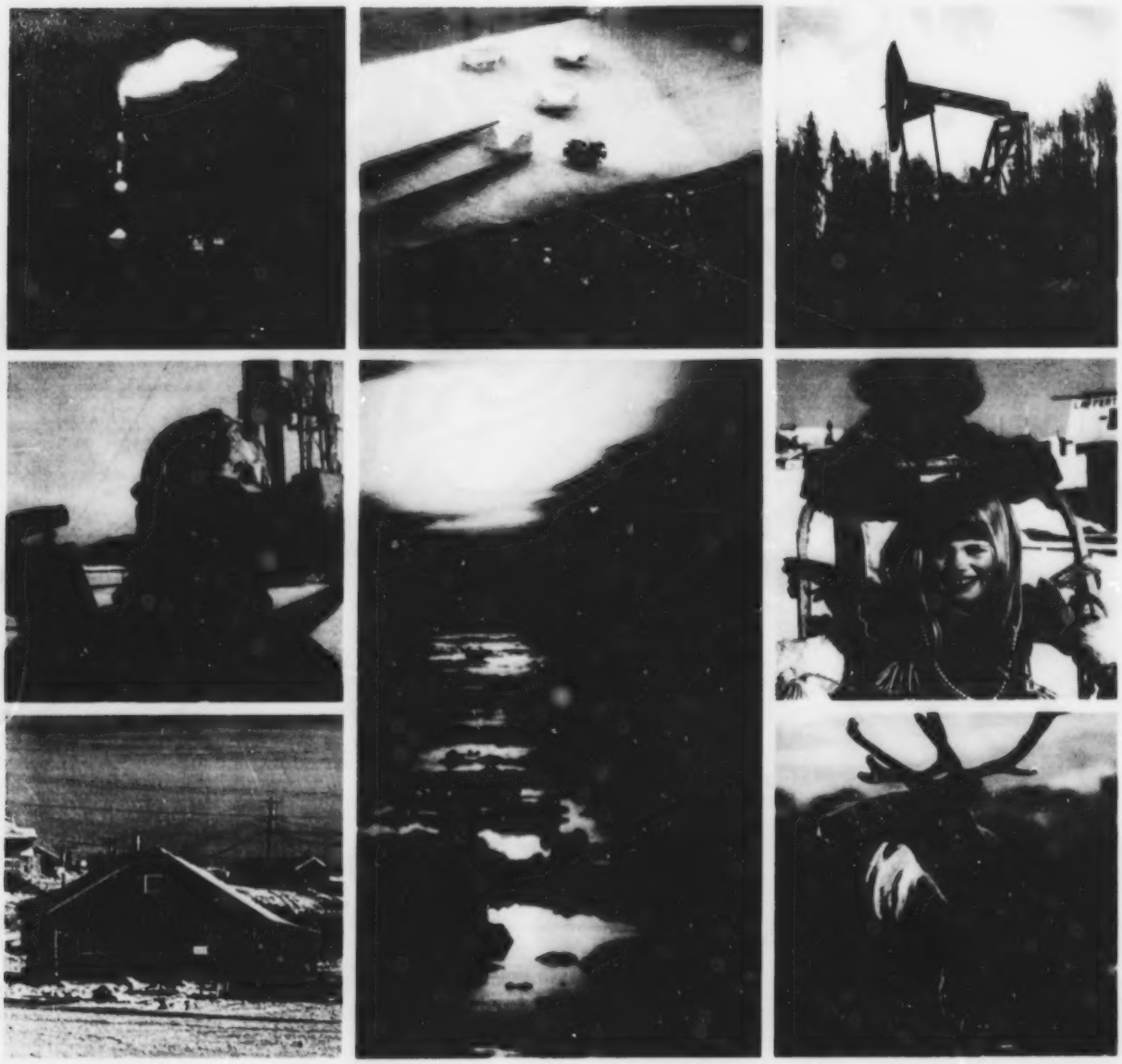
Northwest Territories

Towards a Better Tomorrow

A Non-Renewable Resource Development Strategy for the Northwest Territories



Minister's Message

The Northwest Territories is at an exciting crossroads. Non-renewable resource development, including oil and gas production, development of a Mackenzie Valley gas pipeline, and the continued expansion of the NWT diamond mining sector, can mean the difference between our ongoing dependence on federal transfer payments, and our becoming Canada's first "have" territory.

There is a new entrepreneurial spirit in the NWT, and a new determination by Aboriginal groups to seize control of and benefit from resource development. The Non-Renewable Resource Development Strategy presents an action plan, not only for the Government of the Northwest Territories but for all stakeholders, to seize the opportunities before us. The Strategy seeks to position the NWT and Canada to benefit from increased non-renewable resource development in the NWT, through a combination of investments in much-needed infrastructure, in our human resources, and in support to business and industry. Because the benefits from this development will extend beyond the NWT, we have asked the Government of Canada to join us in making the strategic investments needed to realize these benefits.

This Strategy represents the combined efforts of many people. I would like to thank the members of the Economic Strategy Panel, whose recommendations guided the development of this Strategy. I would also like to thank our partners in the Intergovernmental Forum, the Government of Canada, the Northwest Territories Association of Municipalities, the Northwest Territories Chamber of Commerce, and industry, all of whom took time to review drafts and provide input to improve the document.

I look forward to working with our partners to implement this Strategy and to work towards the 14th Legislative Assembly's vision of "a strong, unified and self-reliant Northwest Territories", as captured in *Towards a Better Tomorrow*.

Joseph L. Handley
Minister of Finance and
Minister of Resources, Wildlife and Economic Development

Non-Renewable Resource Development Strategy for the NWT

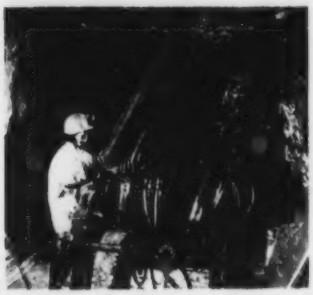


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Photo Credit: front cover diamonds by Tim Atherton

Government of the Northwest Territories

November 2000

Executive Summary

The Legislative Assembly of the Northwest Territories has a vision - "a strong, unified and self-reliant Northwest Territories that can take its rightful place in the federation and the international community". And today the Northwest Territories has the opportunity to realize this vision, and to become the first "have" territory in Canada's history.

The prospects for increasing mineral and petroleum development in the NWT are bright. Diamond mining has become an established industry in the north, with one mine in production and seeking to expand, and two more in the final planning and approva l stages.

The recent surge in the North American market for natural gas has led to a reawakening of interest in NWT oil and gas reserves. Exploration and infrastructure investments in the Fort Liard area now in excess of $100 million per year and have resulted in four significant discoveries. The major producers holding gas reserves in the Mackenzie Delta are undertaking a feasibility study for commercial development and pipeline transportation of Delta gas reserves. For the first time in 25 years, the possibility of a Mackenzie Valley natural gas pipeline is a hot topic in the boardrooms of the nation.

The political climate is right for a new wave of resource development in the north. Twenty-five years ago, when Justice Thomas Berger recommended that construction of a Mackenzie Valley gas pipeline be postponed for at least 10 years, NWT Aboriginal groups were adamantly opposed to a pipeline, and the support for the project by the the Government of the day bitterly divided northerners. But today there is a new consensus emerging in the NWT that non-renewable resource development can be a positive force, and Aboriginal leaders from throughout the Mackenzie Valley are united in their determination to maximize Aboriginal ownership of, and benefits from, a Mackenzie Valley pipeline.

If two new diamond mines and a Mackenzie Valley pipeline become a reality, billions of dollars in resource royalties and tax revenues will be generated. Based on estimated Mackenzie Delta natural gas reserves, as much as $70 billion could flow to Canada from resource royalties and taxes over the life of the mines and gas fields. But under current fiscal arrangements, NWT governments will realize very little direct financial benefit.

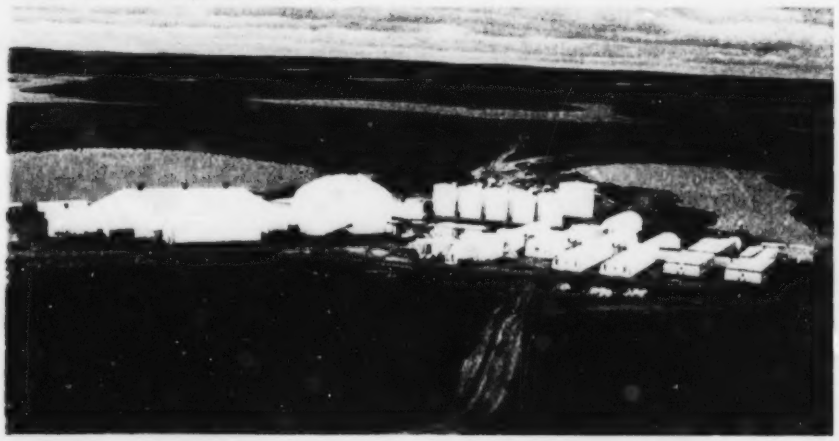
The NWT faces major challenges before its residents can hope to reap maximum benefit from big resource development projects, including:

- **Regional disparities**: the NWT lacks the infrastructure advantages of southern Canada, lessening our competitive advantage in attracting resource developers.
- **Skills and training**: The NWT Aboriginal population has levels of educational achievement significantly lower than national averages. Resource development jobs won't help to address the high unemployment rates in our Aboriginal communities if residents aren't equipped to take advantage of the opportunities.
- **Regulatory regime**: Developers have told us they find the current regulatory regime cumbersome and unresponsive, and are worried by uncertainty surrounding changes that may be put in place when regulatory authority is devolved to northern governments.
- **Undeveloped private sector**: In many cases, the NWT private sector, including Aboriginal development corporations, does not yet have the experience or resources to take advantage of the opportunities that will be created by large-scale infrastructure development projects.

We can meet these challenges, in partnership with Canada and Aboriginal governments. But to do so will require strategic investments – investments which will enable the GNWT and its Aboriginal partners to create an environment that attracts industry, to manage development effectively, and to maximize the benefits of resource development not just for northerners, but for all Canadians.

The GNWT has not hesitated to act, in spite of our constrained fiscal environment. For example, our $12 million investment in the diamond industry has led to the creation of over 100 permanent jobs in Yellowknife and spin-off business and tourism opportunities.

Diamond mine exploration camp



But the GNWT does not have the fiscal flexibility to make all the necessary investments. The draft report of the multi-party NWT Economic Strategy Panel convened by the Minister of Resources, Wildlife and Economic Development notes that, "While GNWT and Aboriginal governments are ready to participate in a major non-renewable resource development, they are handicapped by a lack of capital ...(The GNWT) has no money to invest in resource development or preparations for resource development."

The Non-Renewable Development Strategy outlines 19 specificactions designed to position the NWT and Canada to benefit from NWT resource potential, and to promote economic self-sufficiency for the NWT while contributing to the wealth of Canada. The Strategy is based on four principles:

- Partnership – with Canada, Aboriginal Governments and industry
- Sustainable development
- Economic diversification, and
- Fiscal sustainability

Laying the Ikhil Pipeline to Inuvik

It is not only NWT residents who will benefit. Increased development activity will result in increased revenue flows to Canada, through royalties and taxes. Large-scale resource development will create numerous opportunities for business and industry across Canada, including provision of pipe and other supplies, support services and employment. A recent Conference Board of Canada report on potential development in the Slave Geologic Province estimated that 35% of GDP impacts, and 75% of employment impacts, would occur outside the NWT – primarily in British Columbia, Alberta, Ontario and Quebec. Tapping new Canadian natural gas sources will increase our nation's security of supply, and support both national and international efforts to reduce greenhouse gas emissions by enabling U.S. and Canadian jurisdictions to replace coal and diesel-fired power sources with natural gas.

Through a combination of investments in much-needed infrastructure, in our human resources, in our business sector, and in support to industry, we will:

- position NWT residents and businesses to benefit from development,
- promote equity participation by Aboriginal organizations and governments in resource development projects,
- provide Canada with the opportunity to benefit from increased resource royalties and tax revenues,
- provide business and industry throughout Canada with enhanced opportunities, and
- establish a sound GNWT financial position which will enhance and support implementation of self-government initiatives.

The Strategy assumes that within four years it should be feasible for Canada, the GNWT and Aboriginal Governments to negotiate the devolution of land and water management and a resource royalty sharing agreement. Accordingly, the Strategy outlines our proposed actions, and required investments, for a four-year period.

Vision

The 14th Legislative Assembly of the Northwest Territories has published its vision and priorities for the next four years. *Towards a Better Tomorrow* proposes a vision for a prosperous future that all Northerners can share, which includes the following elements:

- A strong, unified and self-reliant Northwest Territories that can take its rightful place in the federation and the international community.
- Resource development that balances economic benefit, social impacts and environmental preservation and protection.
- Sharing northern benefits among governments, communities and regions.
- A diversified economy, which encourages investment and growth in all sectors.
- Strong Partnerships with aboriginal, federal, provincial and territorial governments.

The Non-Renewable Resource Development Strategy outlines the specific actions needed to achieve the Legislative Assembly's vision and priorities, and the additional investments required to implement those actions.

Fort Good Hope on the Mackenzie River

Background

Drilling in the Sahtu

The NWT and Canada are poised to benefit from increasing development of NWT non-renewable resources in the near future. The prospects for increasing development of NWT mineral and petroleum products are bright, and royalties and corporate taxes are already experiencing significant growth based on current levels of activity.

The NWT has a vast mineral potential, consistently ranked by mining companies surveyed by the Fraser Institute as one of the highest in Canada. The North American market for natural gas has experienced a surge in demand, increasing by 17% since 1990. Canadian exports to the U.S. have increased by 300% since 1985, and natural gas markets are expected to grow by another 40% over the next decade. Initial indications are that the North American demand for Canadian diamonds is high, and increasing international concern over the politics of diamonds mined in western and southern Africa are likely to increase this demand.

The Northwest Territories has experienced high levels of mineral exploration over the past decade, and is currently experiencing the highest levels of interest in the exploration and development of petroleum resources in many years. The world markets for commodities found in the NWT are the strongest that have been seen in several years. For the past seven years there has been significant interest in exploration for and production of diamonds. Over this period of time mining companies have invested millions of dollars in exploration and a further $1.5 billion in constructing production facilities. At this point there is one major diamond mine in production, one under construction and at least one more at the pre-feasibility stage. It is expected that investment in exploration and development will continue actively for the next several years.

Perhaps the strongest market at this point, however, is for natural gas. With consumption rates growing rapidly – the U.S. demand for natural gas is expected to reach 30tcf/yr by 2006 – and with conventional sources of supply declining, the long-term prospect is for a continued increase in the exploration and commercialization of frontier reserves. Already interest in exploration and development of natural gas reserves has increased. Over the past two years, exploration has resulted in four significant discoveries of natural gas in the Fort Liard area. Investment in exploration and infrastructure in this region has surpassed $100 million per year. Projections are for sustained levels of exploration in this part of the NWT for the next few years. In addition, producers are showing an interest in exploring for resources again in the Mackenzie Delta.

Beau Drill Base at Tuktoyaktuk

Recent rights issuances in the NWT have resulted $782 million in work commitments. Overall, we can expect oil and gas companies to invest in excess of $1 billion in exploration projects over the next five year period. This is prior to any work on a pipeline.

The four companies holding gas reserves in the Mackenzie Delta are currently working on a feasibility study for a main transmission line from the Delta to markets in the south. Depending on the results of this study, natural gas from the Delta could be on the market within 6-8 years. Exploration for these resources is complemented by the ongoing interest in base metals and crude oil. Excess capacity in the Norman Wells pipeline to Zama combined with current oil prices has led to increased oil exploration activity in the Sahtu Region.

Current resource potential and the potential benefits are summarized in the table below. It should be noted that benefits from *Existing Projects* and *New Projects* below could be realized over the next 20 to 30 years. Economic models used for the projections are based on reports and studies from industry sources and various agencies, including a recent report by the Canadian Energy Research Institute, (CERI), "*A Comparison of Natural Gas Pipeline Options for the North*". The methodology and sources for all projections are documented in Appendix B.

Benefits from "Possible Projects" are based on the yield over the life of the potential resource base.

Table 1
Existing and Possible Resource Development Projects for the NWT
(Billions $'s)

Commodity	Projected Reserves	Gross Revenue	Royalties	Federal Taxes	NWT Taxes
Existing Projects					
Natural gas	1 Tcf	$2.70	$0.60	$0.50	$0.20
Oil	0.107 Billion bbls	$3.40	$0.80	$0.30	$0.10
Diamonds	173.2 million carats	$23.90	$1.60	$3.00	$1.40
Gold	0.65 million oz.	$0.30	$0.00		
		$30.30	**$3.00**	**$3.80**	**$1.70**
New Projects					
Natural gas	14.9 Tcf	$33.80	$6.10	$5.40	$2.50
Diamonds	41.9 million carats	$6.00	$0.50	$0.90	$0.40
		$39.80	**$6.60**	**$6.30**	**$2.90**
Possible Projects					
Natural gas	47.4 Tcf	$107.50	$19.40	$17.50	$8.00
Oil	1.65 billion barrels	$39.40	$9.50	$7.60	$3.70
		$146.90	**$28.90**	**$25.10**	**$11.70**
Totals		**$217.00**	**$38.50**	**$35.20**	**$16.30** *

** prior to formula financing grant offset – net revenue approximately $3.5 billion as the GNWT only realizes 20% of the gross revenue.*

Finally, the political climate is right for a new wave of resource development in the NWT. Twenty-five years ago Justice Thomas Berger recommended that a Mackenzie Valley natural gas pipeline be postponed for 10 years, to allow time for land claims to be settled and for new programs and institutions to be established that would ensure Aboriginal people would benefit from the development. To a great extent, the concerns identified in Justice Berger's report as the basis for delay have been addressed: there has been substantive progress towards settlement of land claims and negotiation of self-government agreements; regional and local control of programs has been increased substantially; and Aboriginal development corporations are poised to benefit from new opportunities.

There is a new consensus emerging in the NWT that non-renewable resource development can be positive when all parties have a role to play in managing the pace and scale of development, and an opportunity to share in the benefits.

Recognizing these changes, DIAND Minister Nault has stated his commitment to fast-track the devolution of control over resource management to the NWT. And Aboriginal leaders from throughout the NWT have recently formed the Aboriginal Pipeline Group "to build a business partnership to maximize ownership and benefits of a Mackenzie Valley pipeline". The federal and territorial governments have provided some start-up funding to support the work towards this objective.

"More control for northerners over lands and resources has been talked about too much, for too long, with too little to show for it. (Devolution will proceed) as far and as fast as we are all ready to go."

Minister Nault
Statement to the Legislative Assembly, January 20th, 2000

Laying the Ikhil Gas Line to Inuvik

The potential benefits for Canada and the NWT are huge. With a land mass of 1.2 million square kilometres, the NWT is endowed with world-class resource potential. Royalties alone will be in the billions of dollars over the next 20-30 years and Canada will realize huge corporate tax revenue increases as well. These numbers are documented in *Appendix B*. In addition, provincial economies will benefit as business and industry players throughout Canada take advantage of the increased activity in the north.

The GNWT's tax revenues will also increase significantly. However, the federal government will receive most of the fiscal benefits. Under the formula financing grant arrangement with Canada, approximately 80% of the revenue increases from economic growth are offset by lower transfer payments to the GNWT.

Drilling for gas in the Deh Cho

Our Challenges

Diamond drill core samples

Despite the bright potential outlined above, there are several challenges to be overcome before the NWT and Canada can reap maximum benefit from resource development. Social and demographic pressures continue to push up territorial spending requirements, leaving little flexibility for the Government of the NWT to make the required proactive investments in development.

Low educational levels: Although the overall levels of educational achievement in the NWT are improving, many segments of our population are still significantly below the national average. These low educational levels contribute to higher unemployment among Aboriginal residents in many of our communities, resulting in reliance on income support programs for too many NWT residents.

Regional disparities: The NWT does not enjoy the same service levels as other regions of Canada. Transportation and communications infrastructure are struggling to narrow the gap between NWT levels and the standards enjoyed by other Canadians. Our residents must travel farther to access specialized health care and advanced educational opportunities. At the same time, we share the same demographic and technological pressures that every Canadian jurisdiction is facing in its social program delivery. Lack of infrastructure has also been identified as a deterrent to mineral exploration investment and development in the NWT, as indicated in the most recent Fraser Institute Annual Survey of Mining Companies.

Boom-and-bust economy: Because of the large role that non-renewable resources play in the NWT economy, we have been particularly vulnerable to the "boom-and-bust" cycle. The downturn in Beaufort Sea petroleum exploration and development in the 1980s, and the more recent impact on the Yellowknife economy of lagging gold prices, have highlighted the need to diversify the NWT's economic base.

Biophysical and socioeconomic impacts: The northern biophysical environment is sensitive to environmental disturbances and less able to quickly recover. People rely heavily on renewable resources for economic and cultural well-being. Small communities are susceptible to disruption from in-migration. Little is known about how the NWT biophysical and socioeconomic environment will react to large-scale development.

Pipefitting

Undeveloped private sector: In many cases, the NWT private sector, including Aboriginal development corporations, does not yet have the experience or resources to take advantage of the opportunities that will be created by large-scale infrastructure development projects.

Complex and evolving regulatory environment: The NWT regulatory environment is generally perceived by developers as cumbersome and unresponsive. Developers face uncertainty surrounding the royalty and tax regime, given that devolution of resource management authority has not occurred, and a resource revenue sharing agreement between the federal and northern governments has not been completed. Developers also express concerns about the impact of unsettled land claims on their ability to proceed with exploration. Barriers in gaining access to land for exploration purposes has stalled exploration in many cases. All of these issues will be addressed in more detail below, in the discussion of individual components of the Strategy.

A 1999 report by the Canada West Foundation noted that putting decision-making within the hands of northerners, and providing NWT residents with greater control over resource revenues, are essential components of an effective economic development strategy for the NWT. These requirements are addressed in this action plan.

None of these challenges is insurmountable. The Legislative Assembly's vision *Towards a Better Tomorrow* identifies broad strategies that will help to tackle these challenges. As emphasized in the Legislative Assembly's vision, however, the challenges are not the NWT's alone. Our goals can only be achieved by working in partnership – with the Government of Canada and with our Aboriginal government partners.

But if we are to realize the opportunities before us, we need the capacity to make strategic investments today. The GNWT's constrained fiscal situation prevents us from making the investments necessary to tackle these challenges and to ensure that both the NWT and Canada can benefit fully from the NWT's resource development potential. Recognizing the need for action, we have not hesitated to act in key areas. For example, in the absence of a federal government policy or support framework for the secondary diamond industry, the GNWT has invested over $5 million in directly supporting and promoting this industry. Overall, the GNWT has invested a total of $12 million in the diamond industry.

However, every such investment is made in the full knowledge that it increases our operating deficit – and that the GNWT will realize only a small portion of the revenues generated.

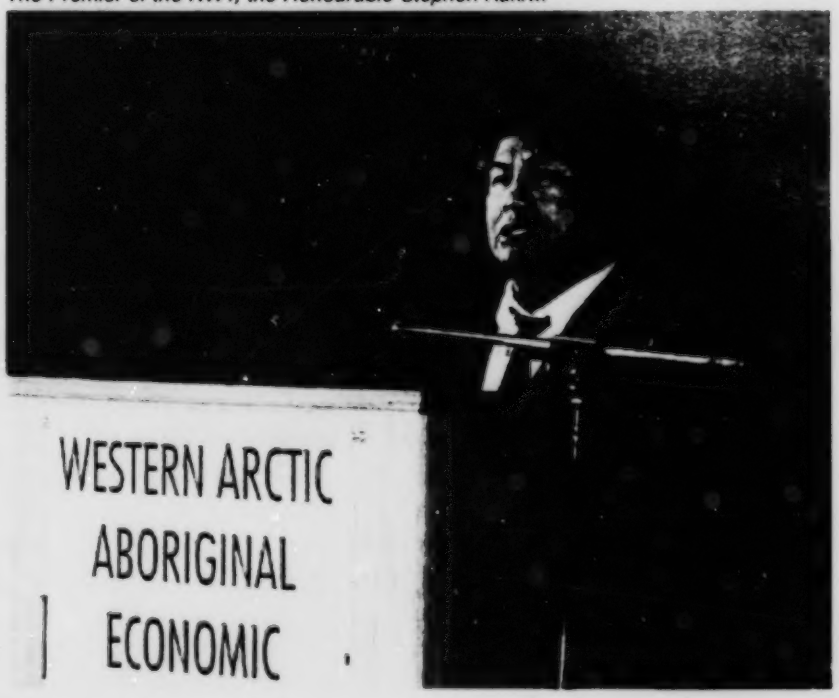
Common Ground, the report of the multi-party NWT Economic Strategy Panel convened by the Minister of Resources, Wildlife and Economic Development, cites the GNWT's inability to make strategic investments as a major impediment, stating that, "While GNWT and Aboriginal governments are ready to participate in a major non-renewable resource development, they are handicapped by a lack of capital...(The GNWT) has no money to invest in resource development or preparations for resource development."

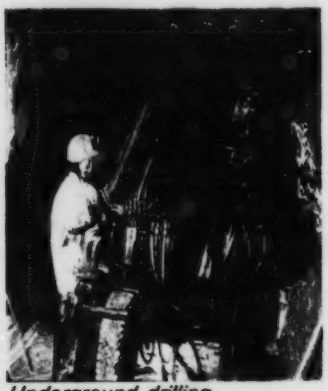
Throughout the evolution of Canadian federalism, there has been a tradition of progressive increase in local control over natural resources and public finances. As the NWT moves into the 21st century, we want to assume our place in the federation, while contributing to Canada. The renewed interest in the NWT's potential and the emerging political climate combine to provide us with a unique opportunity to forge a stronger territory with a stable economic base and an active role in the Canadian federation.

"Non-renewable resource development ... can mean the difference between our ongoing dependence on federal transfer payments, and our becoming Canada's first "have" territory."

Premier Stephen Kakfwi at the 2nd Annual Insight Conference Calgary, Alberta, September 20, 2000

The Premier of the NWT, the Honourable Stephen Kakfwi





Underground drilling

It is not only the NWT that stands to benefit from devolution of resource management authority, sharing of resource revenues and effective investment in a resource development strategy. Canada will benefit from an improved climate for resource development, through the establishment of a more co-ordinated and cost-effective regulatory process, and through enormous potential for enhanced resource revenues through both royalties and taxes. Primary and secondary industries throughout Canada will also benefit from the increased opportunities. A 1994 Conference Board of Canada report on potential development in the Slave Geologic Province estimated that 35% of GDP impacts, and 75% of employment impacts, would occur outside the NWT – primarily in British Columbia, Alberta, Ontario and Quebec. As well, the Canadian Energy Research Institute has estimated the employment impacts of construction of a Mackenzie Valley / Prudhoe Bay pipeline to be 11,110 person years for the NWT, but 60,020 for all of Canada.

Tapping new Canadian natural gas sources will increase our nation's security of supply, and support both national and international efforts to reduce greenhouse gas emissions by enabling U.S. and Canadian jurisdictions to replace coal and diesel-fired power sources with natural gas.

Aboriginal governments will benefit from this development in two ways. There will be business opportunities for Aboriginal Development Corporations. As well, the establishment of a sound financial position for the GNWT will ensure that the GNWT has the capacity to support implementation of self-government initiatives, and that the integrity of GNWT programs and services is maintained in anticipation of the transfer of authority through self-government agreements.

We have an unprecedented opportunity today for the Northwest Territories to become Canada's first "have" territory. But we cannot do it on our own. The support of the federal government is essential – to help us make needed investments now. The window of opportunity will not last forever. Twenty-five years ago excitement about northern resource potential waned due to lack of political support, and changing market conditions. The Government of the Northwest Territories is determined to seize the opportunity that exists today and promote the development of NWT petroleum and mineral resources so that NWT residents, and all Canadians, can realize the benefits while maintaining a healthy environment.

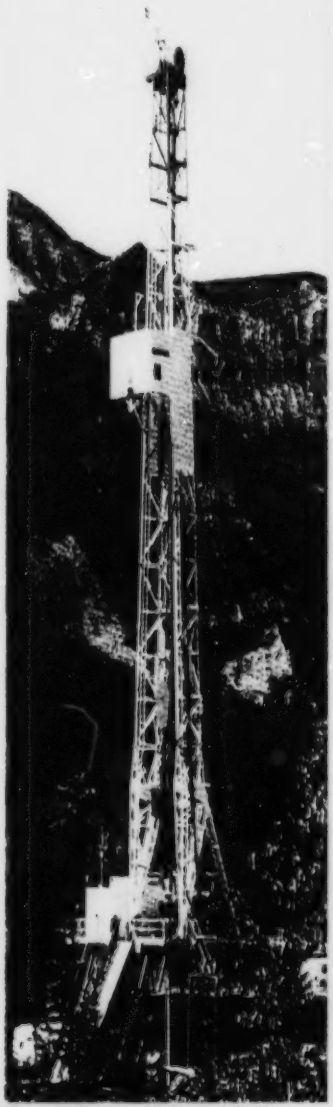
The NWT Non-Renewable Resource Development Strategy

The proposed Strategy hinges on three key components:

1. creating the right environment for development,
2. managing development, and
3. maximizing benefits.

What do we hope to achieve through this strategic approach? Specific outcomes are identified below, but in general terms the Strategy is intended to achieve the following:

- Promote economic self-sufficiency for the NWT to reduce fiscal dependence on Canada.
- Contribute to the wealth of Canada.
- Promote development of a stable, diversified economy in the NWT.
- Protect the NWT environment, renewable resources and wildlife.
- Maximize opportunities for jobs and careers for northern residents and all Canadians in the non-renewable resource industry.
- Provide both short- and long-term business opportunities for small and medium-sized northern businesses.
- Create long-term wealth generation opportunities for Aboriginal governments and claimant groups.
- Provide a financial legacy for future generations.
- Encourage transportation infrastructure to maximize access to resources and to ensure longer-term sustainability of northern communities.



Gas well near Nahanni Butte

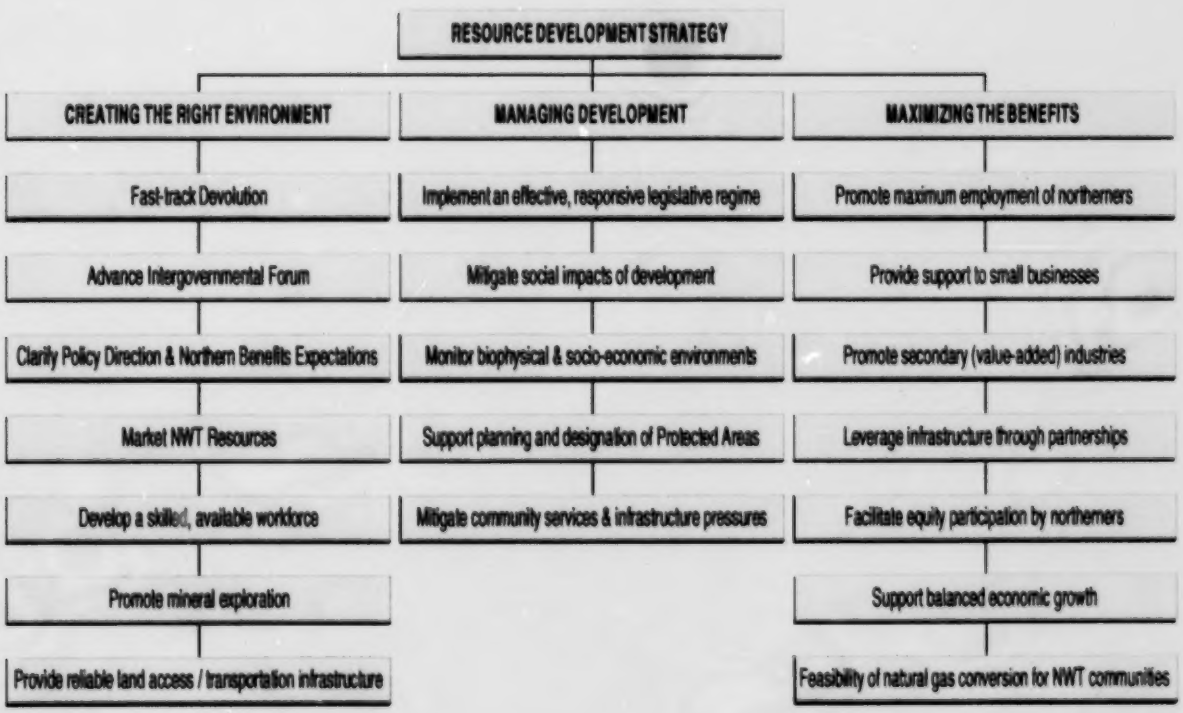
Enjoying summer in Rae

The Strategy is based on the following principles, which will be taken into consideration in the design and implementation of each element of the Strategy:

- **Partnership**: Progress on the NWT Legislative Assembly's vision will only happen through partnerships – with Canada, with Aboriginal governments and claimant groups, with other provinces and territories, and with industry.
- **Sustainable development**: The concept of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" will inform all decision-making on non-renewable resource development.
- **Economic diversification**: In order to achieve economic self-reliance, the NWT must ensure a broad economic base.
- **Fiscal sustainability**: Benefits from non-renewable resource development must be invested in areas where economic activity can be sustained over the long term, in order to leave a legacy for future generations.

The key elements of the Strategy are outlined in the graphic below. Each one is discussed in detail in Appendix C.

Table 2: Strategy Overview


RESOURCE DEVELOPMENT STRATEGY
CREATING THE RIGHT ENVIRONMENT
MANAGING DEVELOPMENT
MAXIMIZING THE BENEFITS
Fast-track Devolution
Advance Intergovernmental Forum
Clarify Policy Direction & Northern Benefits Expectations
Market NWT Resources
Develop a skilled, available workforce
Promote mineral exploration
Provide reliable land access / transportation infrastructure
Implement an effective, responsive legislative regime
Mitigate social impacts of development
Monitor biophysical & socio-economic environments
Support planning and designation of Protected Areas
Mitigate community services & infrastructure pressures
Promote maximum employment of northerners
Provide support to small businesses
Promote secondary (value-added) industries
Leverage infrastructure through partnerships
Facilitate equity participation by northerners
Support balanced economic growth
Feasibility of natural gas conversion for NWT communities

Creating the Right Environment

Several challenges must be addressed before the NWT's resource development potential can be realized. Currently there is a perception on the part of industry that the legislative and regulatory regimes that govern development activity in the NWT are cumbersome, duplicative and unresponsive. This is compounded by the geographic distance of administering bodies from the NWT (Ottawa and Calgary).

Industry has also expressed concern that the legislative regime and standards that guide development are not fixed, thereby making planning difficult and expensive. The lack of an established, consistent requirement for northern benefits agreements also acts as a disincentive to prospective developers, who feel that they cannot rely on established precedents to guide their dealings in this area.

Most other jurisdictions in Canada have developed standards of practice for developers. The lack of standards in the NWT means that each new project faces uncertainty as to the regulatory process and rigor of approvals.

The new Mackenzie Valley Resource Management Act will address some of these barriers, but it will take time for the impacts of the new management regime to be felt.

Until devolution is accomplished, potential resource developers also face some uncertainty surrounding the royalty and tax regime in the NWT, which could impede business investment.

Access to land for exploration purposes has also been cited by the petroleum industry as a barrier. Difficulties in access have been attributable to opposition by communities, a slow and laborious process for nominating land and calling for bids, and the network of national parks, park reserves and lands protected under settled and pending Aboriginal land claim agreements.

Finally, as noted above, lack of infrastructure has been cited by industry as a primary deterrent to exploration and development. The GNWT's ability to invest in infrastructure expansion is hampered by the fact that, although we receive no direct benefit from resource royalties, we are still faced with the direct costs of infrastructure that is straining under increasingly heavy industrial use.

It is clear that in order to realize our economic potential, the NWT must take effective action to tackle these barriers, and spread the word that change is occurring. To accomplish this, we propose the following strategies:

1. In partnership with Aboriginal governments and claimant organizations, fast-track the devolution of the land, water and resource management regime, and develop an effective and balanced tax and royalty regime, resulting in regulatory clarity and efficiency.
2. Advance the Intergovernmental Forum to develop a multi-party agenda for the NWT.
3. Clarify the GNWT strategic interest in non-renewable resource development, and pre-conditions for GNWT support; and provide clarity on northern and Aboriginal benefits expectations.
4. Market and promote the advantages and benefits of developing NWT resources nationally and internationally.
5. Develop a skilled, available workforce that industry can draw upon.
6. Promote mineral exploration through incentive programs and the development of geoscience databases.
7. Make strategic investments in two northern transportation corridors, which will create significant opportunities and benefits for northern resource development, and rehabilitate and upgrade existing highways.

More details on these strategies, including current GNWT investment, further required investment, and anticipated benefits or payback, are outlined in Appendix C.

Managing Development

Young partnerships

Currently, the pace, magnitude and nature of non-renewable resource development in the NWT are managed by the Government of Canada. Over the past 15 years, northerners have repeatedly attempted to gain a greater role in managing these resources, and reaping the benefits.

Northerners have expressed dissatisfaction with the current approach to northern resource management for many reasons. We believe that accountability is increased when decisions are made by the people with the most direct stake in the results of those decisions. The complexity of the existing regime, with responsibilities shared among many departments and agencies, does not support efficient and effective decision-making. This in turn leads to problems with timeliness of responses to development proposals. Another effect of the complexity is that it is confusing and frustrating for proponents and others to understand the process for approvals, and which levels of government and agencies are responsible for various aspects of approval.

Finally, the fact that there is no direct financial incentive to NWT governments does not encourage northerners to play an active role in promoting resource exploration and extraction.

Northerners are convinced that a regulatory regime controlled in the NWT would be more effective than the current regime for many reasons:

- Northerners know and understand the NWT better than DIAND or NEB personnel located in Ottawa and Calgary.
- Aboriginal and public governments can work together to identify issues and promote employment and sustainable development.
- A portion of revenues from development would be reinvested in the north, to reduce our dependence on transfers from Canada and lead to greater economic self-reliance.
- Northern issues would have a stronger footing in policy discussions.
- Northern governments would have more flexibility to create a fiscal environment that would stimulate development and increase northern benefits.
- Northern governments would ensure environmental issues are addressed fully and efficiently.

Gold mine headframe

There is also a need to prepare northern communities to cope with the impacts of rapid development. Previous experience with large-scale resource development projects such as the Norman Wells pipeline to Zama, and the Ekati diamond mine, has taught us that the social impacts of sudden increased population pressures on small communities, and of sudden changes in employment and wage patterns, can result in negative social impacts. During the oil and gas boom of the 1980s, some small communities were unprepared for the increased demands on community infrastructure and community services. Good advance planning and preventive support programs can ensure that negative impacts on communities are minimized.

To promote a responsible, northern, integrated resource management regime, and to equip communities to take maximum advantage of development, we propose the following strategies, all of which must be undertaken in full partnership with Aboriginal governments and claimant organizations:

8. Implement and manage an effective and responsive regime for land, water and resource management post devolution.
9. Mitigate impacts of moving to a non-traditional economy, especially where jobs are located at remote work sites, by ensuring appropriate support programs and services are available.
10. Establish an effective, coordinated monitoring and mitigation system for both biophysical and socio-economic environments, with clear standards and remediation requirements, reporting, consequences for non-compliance and incentives for enhanced performance.
11. Support the planning and designation of NWT protected areas.
12. Ensure appropriate community services and infrastructure are in place to accommodate increased pressures from development.

The details of these strategies and proposed investments are outlined in Appendix C.

Maximizing Benefits

Surveying

As noted above, the ability of NWT residents to benefit fully from resource development opportunities is limited by educational achievement and skill levels. Equipping our population with the knowledge and skills required to participate effectively will be critical to keeping the benefits of development in the NWT. In addition to training, there is a requirement for ongoing coordination with industry to ensure that information on jobs is available to NWT residents, and information on the available workforce is provided to industry.

Residents of small, remote communities may also require transportation assistance to enable them to take advantage of employment opportunities on resource projects, given the prohibitive costs of transportation in the north.

Many NWT businesses do not have the capacity, access to working capital or access to professional expertise that is required to enable them to gear up to take full advantage of industry support requirements.

In keeping with the principle of sustainable development, it is essential that northerners ensure that the diversity and integrity of the NWT's ecosystems are preserved. Once an integrated monitoring regime is in place and functional, negative environmental impacts can be managed and mitigated.

Finally, we must be mindful that an economy based on a limited number of non-renewable resources is vulnerable to boom-and-bust cycles. A key element of our economic development strategy must be to ensure that investments are made in small-scale, sustainable economic projects that will be viable when the non-renewable resources are depleted. We must ensure that a financial legacy is left for future generations.

In order to ensure that northern residents reap the maximum benefits from resource development, we propose the following strategies:

13. Promote maximum employment of northerners through provision of labour force data to industry, career counselling and employment services, targeted training programs, and support the development of a mobile, flexible workforce.
14. Provide support to small business by enhancing existing programs.
15. Promote secondary (value-added) industries.
16. Leverage infrastructure opportunities through partnerships.
17. Support long-term wealth creation through northern equity participation in oil and gas infrastructure.
18. Support balanced growth of the NWT economy.
19. Examine the feasibility of providing NWT communities with access to natural gas.

The details of these strategies and proposed investments are outlined in Appendix C.

Twin Otter - a northern taxi

Financial Summary

Appendix A provides a summary of the investment required for each of the proposed strategies over a four-year period, the current GNWT commitment to investment, and the incremental investment required. The four-year window is reasonably expected to allow sufficient time to complete planning for the devolution of authority to the NWT.

The Strategy outlines a required investment of $339 million over four years in order to achieve the Legislative Assembly's vision, and realize the significant benefits to the NWT and Canada as a whole from the ongoing development of the NWT's non-renewable resources. Over this four-year period, the GNWT is prepared to invest over $100 million – one third of the total required amount. We are asking the Government of Canada to commit to the additional incremental investment of $235 million over four years.

On the Liard Highway

Conclusion

It is in the best interests of Canada, the GNWT and Aboriginal governments to implement an effective Non-Renewable Resource Development Strategy in order to realize the economic potential of the NWT. Appendix C demonstrates that there is a direct and quantifiable return on the proposed investments. This Strategy seeks significant additional federal funding support, for a limited time period, to make needed investments now while the development opportunities exist. Assuming a successful negotiation of resource revenue sharing is completed within five years, this Strategy will represent an important step towards allowing the NWT to become economically self-reliant and self-sustaining.

The support and assistance of the Government of Canada at this time will represent an investment in the future of the NWT and of Canada. Investment by Canada will:

- Provide the GNWT with the tools to make strategic investments with long-term paybacks;
- Position northerners to take maximum advantage of resource development business and employment opportunities through proactive investments;
- Provide significant increased resource royalty and tax revenues for Canada and the GNWT;
- Provide an environment of regulatory certainty that will encourage investment in economic activity;
- Promote economic self-sufficiency of the NWT;
- Promote Aboriginal equity participation in large-scale development;
- Reduce the NWT's fiscal dependence on Canada.

Appendix A
Financial Summary

Non-Renewable Resource Development Strategy for the NWT

Action	Year 1	Year 2	($000s) Year 3	Year 4	Total
1 Fast-track devolution of resource management					
Total Required Investment	1,000	1,000	900	1,000	3,900
GNWT Commitment	400	400	400	400	1,600
Incremental Investment	*600*	*600*	*500*	*600*	*2,300*
2 Support and facilitate an Intergovernmental Forum					
Total Required Investment	915	1,158	1,158	1,158	4,389
GNWT Commitment	582	825	825	825	3,057
Incremental Investment	*333*	*333*	*333*	*333*	*1,332*
3 Clarify policy direction and northern benefits expectations					
Total Required Investment	1,480	1,470	1,420	1,410	5,780
GNWT Commitment	680	670	610	600	2,560
Incremental Investment	*800*	*800*	*810*	*810*	*3,220*
4 Market and promote the advantages of NWT resource development					
Total Required Investment	1,000	1,000	600	600	3,200
GNWT Commitment	250	150	100	100	600
Incremental Investment	*750*	*850*	*500*	*500*	*2,600*
5 Development of a skilled, available workforce					
Total Required Investment	4,490	4,490	4,490	4,390	17,860
GNWT Commitment	1,770	1,770	1,770	1,770	7,080
Incremental Investment	*2,720*	*2,720*	*2,720*	*2,620*	*10,780*
6 Incentive programs for mineral exploration					
Total Required Investment	6,025	6,025	6,025	6,025	24,100
GNWT Commitment	75	75	75	75	300
Incremental Investment	*5,950*	*5,950*	*5,950*	*5,950*	*23,800*
7 Land access / transportation strategy					
Total Required Investment	41,000	43,000	43,000	43,000	170,000
GNWT Commitment	15,700	17,400	17,100	17,000	67,200
Incremental Investment	*25,300*	*25,600*	*25,900*	*26,000*	*102,800*
8 Implement an effective, responsive legislative regime					
Total Required Investment	-	-	-	-	-
GNWT Commitment	-	-	-	-	-
Incremental Investment	-	-	-	-	-

Action	Year 1	Year 2	(costs) Year 3	Year 4	Total
9 Mitigate the social impacts of development					
Total Required Investment	1,800	2,400	2,400	1,400	8,000
GNWT Commitment	-	-	-	-	-
Incremental Investment	*1,800*	*2,400*	*2,400*	*1,400*	*8,000*
10 Biophysical and socio-economic monitoring					
Total Required Investment	4,000	4,000	4,000	5,000	17,000
GNWT Commitment	925	550	550	550	2,575
Incremental Investment	*3,075*	*3,450*	*3,450*	*4,450*	*14,425*
11 Support planning and designation of NWT Protected Areas					
Total Required Investment	500	500	700	700	2,400
GNWT Commitment	200	200	200	200	800
Incremental Investment	*300*	*300*	*500*	*500*	*1,600*
12 Mitigate community services and infrastructure pressures					
Total Required Investment	2,050	2,300	4,450	2,700	11,500
GNWT Commitment	-	-	-	-	-
Incremental Investment	*2,050*	*2,300*	*4,450*	*2,700*	*11,500*
13 Promote maximum employment of northerners					
Total Required Investment	1,104	1,104	1,304	1,304	4,816
GNWT Commitment	729	729	729	729	2,916
Incremental Investment	*375*	*375*	*575*	*575*	*1,900*
14 Provide support to small businesses					
Total Required Investment	12,500	12,500	12,500	12,500	50,000
GNWT Commitment	3,000	3,000	3,000	3,000	12,000
Incremental Investment	*9,500*	*9,500*	*9,500*	*9,500*	*38,000*
15 Promote secondary (value-added) industry					
Total Required Investment	2,500	2,500	2,500	2,500	10,000
GNWT Commitment	1,000	1,000	1,000	1,000	4,000
Incremental Investment	*1,500*	*1,500*	*1,500*	*1,500*	*6,000*
16 Leveraging of infrastructure investments through partnerships					
Total Required Investment	-	100	200	200	500
GNWT Commitment	-	-	-	-	-
Incremental Investment	*-*	*100*	*200*	*200*	*500*

Action	Year 1	Year 2	($000s) Year 3	Year 4	Total
17 Support long-term wealth creation through equity participation					
Total Required Investment	200	500	500	500	1,700
GNWT Commitment	-	-	-	-	-
Incremental Investment	*200*	*500*	*500*	*500*	*1,700*
18 Support balanced economic growth					
Total Required Investment	500	500	1,000	1,300	3,300
GNWT Commitment	-	-	-	-	-
Incremental Investment	*500*	*500*	*1,000*	*1,300*	*3,300*
19 Feasibility of natural gas conversion for Mackenzie Valley communities					
Total Required Investment	60	465	65	50	640
GNWT Commitment	60		-	-	60
Incremental Investment	*-*	*465*	*65*	*50*	*580*
Total Required Investment	81,124	85,012	87,212	85,737	339,085
Total GNWT Commitment	25,371	26,769	26,359	26,249	104,748
Required Incremental Investment	*55,753*	*58,243*	*60,853*	*59,488*	*234,337*

Appendix B
Potential NWT Resources and Benefits

Non-Renewable Resource Development Strategy for the NWT

Commodity	Projected Reserves	($ billions) Gross Revenue	Royalties	Federal Corporate Taxes	Federal Personal Taxes	NWT Corporate Taxes	NWT Personal Taxes
Existing Projects							
Natural gas[1]	1 Tcf	$2.7	$0.6	$0.5		$0.2	
Oil[2]	0.107 Billion bbls	$3.4	$0.8	$0.3		$0.1	
Diamonds[3]	173.2 million carats	$23.9	$1.6	$2.7	$0.3	$1.3	$0.1
Gold[4]	0.65 million oz.	$0.3	$0.0				
New Projects							
Natural gas[5]	14.9 Tcf	$33.8	$6.1	$5.4		$2.5	
Diamonds[6]	41.9 million carats	$6.0	$0.5	$0.8	$0.1	$0.4	
Total Existing and New Projects		**$70.1**	**$9.6**	**$9.7**	**$0.4**	**$4.5**	**$0.1**
Possible Projects							
Natural gas[7]	47.4 Tcf	$107.5	$19.4	$17.5		$8.0	
Oil[8]	1.65 billion barrels	$39.4	$9.5	$7.6		$3.7	
Total Possible Projects		**$146.9**	**$28.9**	**$25.1**	**$0.0**	**$11.7**	**$0.0**

Notes:

1. Reflects Fort Liard model a price of $3.20 Cdn/Mcf at Huntingdon/Sumas.
2. Norman Wells from year 2000 forward, at $21 US per barrel at Chicago.
3. Diavik and Ekati diamonds, per existing model.
4. Giant and Con gold mine at 5 years of 130,000 oz. per year, gold at $280 US/oz and $1.50 C/$1 US.
5. Mackenzie Delta at $3.50 Cdn/GJ at the AECO-C hub in Alberta, 1.36 Bcf/day, stand-alone pipeline, projected reserves reflect CERI report on "A Comparison of Natural Gas Pipelines for the North"
6. Winspear diamond project @ 75% of Diavik.

7,8. Projections for *Possible Projects* are simply pro-rated based on Existing & New Projects and "projected reserves" and would realistically take decades to realize.

Source: Government of the NWT Departments of Finance and Resources, Wildlife and Economic Development.

Natural Gas Projections

The above projections for New Projects for natural gas reflect the work of the Canadian Energy Research Institute (CERI) reported in *A Comparison of Natural Gas Pipeline Options for the North*. Projected reserves reflect CERI's figures as well as the projected throughput, based on a 30-year period. Primary differences from the CERI analysis are: (1) above revenues are not discounted and (2) taxes are not discounted and the NWT figures do not account for the grant-from-Canada offset.

CERI also modeled a pipeline that combines Alaskan gas with Delta gas, shipping both up the valley, resulting in even more favourable economics, i.e. gross revenue is $39 billion as opposed to $33.8 and royalties are $7.8 billion versus $6.1 billion cited above.

Methodology and Assumptions

The projected federal royalties for the *Existing* and *New* resource developments in the NWT are based on economic models, using a number of estimates and assumptions. Developments currently in production, such as the Norman Wells oil field, and the BHP Diamond Mine, have a higher degree of certainty, as many of the costs and production figures are known. For example, the GNWT forecasting model used for BHP has been compared with the model developed by the federal government, and a copy was sent to BHP for comment. No significant differences were found. As well, a number of the natural gas projections were based on the Canadian Energy Research Institute report, *"A Comparison of Natural Gas Pipeline Options for the North."*

The following is a description of the methodology and assumptions used for the projections in Appendix B. Where applicable, a U.S. exchange rate of 70 cents/dollar was used.

BHP Diamond Mine

- Estimates were primarily derived from the Project Description of the BHP Environmental Impact Assessment.
- Production is estimated at 3.285 million tons per year from 2000 to 2006. Expansion of operations will then increase production to 6.5 million tons per year until 2020.
- The production estimates do not take into account the proposed changes to the mine development plan. These changes are expected to further improve mine profitability.
- Market prices range from U.S. $77 to $130 per carat.

Diavik Diamond Mine

- Estimated production and project costs were based on the Project Description from the Environmental Impact Assessment required for the approvals process for the Diavik project.
- Production is estimated to rise to 2 million tons per year in 2003 and remains at that level until 2014. Production then declines each year until 2020 when it is estimated at 1.334 million tons.
- Market prices range from U.S. $49 to $55 per carat. Prices were based on the value of the last bulk sample conducted by Diavik during the summer of 1999.

Snap Lake (Winspear)

- While the Snap Lake project is not as far along in the approvals process as the Diavik project, the proposed Snap Lake project is a diamond bearing kimberlyte dyke, as opposed to kimberlyte pipes. This results in far less engineering obstacles and complexities in bringing the mine into production. Pending completion of a final feasibility study during the summer of 2000, production could start as early as 2002. It should be noted that results released by Winspear Resources have been the highest in the NWT to date, in terms of quality and quantity of diamonds per sample.

- Royalties and taxes have been estimated at 75% of those collected from the Diavik mine.

Norman Wells Oil

- Current production is approximately 28,000 barrels per day and will experience a significant decline towards the end of the time period. By 2020 production is estimated at 6,400 barrels per day.
- Royalty figures include the net Crown interest in the field, based upon a recent court decision, initiated by the Sahtu Secretariat Incorporated.
- Totals are considered conservative as it is expected there will be further exploration due to the economics of the increasing excess capacity in the Zama pipeline, along with the current high price of oil.

Natural Gas Pricing

- Prices for natural gas are more volatile than for the other projected developments. In forecasting prices five to twenty years in the future, a number of sources project a fairly wide range of prices. The Natural Gas Division of Natural Resources Canada, in their annual review, (April 1999), show prices to 2005 ranging from U.S. $2,25 to $3.25/MMBtu. These are wellhead or Gulf of Mexico prices, and are based on surveys of a number of industry organizations. A study by Purvin & Gertz has wellhead prices sustained at $3.00/Mcf to 2005. This appears reasonable, as the average gate price in Illinois has been approximately $2.80 for 1998 & 1999.
- Historically, there has been a price differential between the Huntingdon-Sumas price and the price of gas at Chicago, due in part to lack of pipeline capacity that affected supply. With the building of the Alliance pipeline from British Columbia to Chicago, this differential is expected to decline. The gas price was higher, on average, in Chicago by 77 cents US/Mcf in 1999 and $1.06 in 1998, than the border price at Huntingdon/Sumas.
- Based on the above, the price used for Fort Liard projections was $3.20 Cdn/Mcf at Huntingdon/Sumas.
- To arrive at the projections for the MacKenzie Delta, the price assumed was $3.50Cdn/GJ at the AECO-C storage hub in Alberta.

Fort Liard Gas

- Well and facilities costs were based on the Canadian Energy Research Institute study *The Economics of the Southern Mackenzie Valley* (1996):
  - operating costs are determined as a percentage of capital costs, varying with the type of capital, based on engineering estimates consistent with current industry practise.
  - corporate costs are 10% of operating costs and 1% of total project costs.
- The potential for companies to take advantage of the Frontier Exploration Royalty credit has not been included in the royalty projections. Due to the relative lack of exploration in the north, it is assumed that these credits would result in future growth and additional royalties in the long run.

- Production for all three fields, (Chevron, Ranger, Paramount), based on company estimates, starts off at 51 billion cubic feet, (bcf), per year, rises to 68 bcf in 2001, and gradually falls to 18 bcf by 2020.
- Production figures must be considered conservative, as they do not include any other gas discoveries to utilize excess pipeline capacity in later years. Further discoveries must be considered very likely, especially in light of a recent discovery announced by Chevron in January, 2000. Early results indicate that this discovery could be in line with Chevron's K-29 well, which is one of the largest gas discoveries in Canadian history. This latest discovery is not included in projections.

Mackenzie Delta Gas

- All estimated exploration and development costs, pipeline costs, reserves estimates and assumptions, tolling methodology, and throughput capacity are based upon the Canadian Energy Research Institute report, *"A Comparison of Natural Gas Pipeline Options for the North."*
- Consistent with the methodology employed in the Fort Liard projections, the royalty calculations do not include any claims for the Frontier Exploration Royalty credit.
- The natural gas liquid potential of the pools has not been included in the projections. These would further enhance the economics of the potential development.
- Corporate taxes include the impact from pipeline construction and field development.
- The 14.9 tcf reserve estimate for new projects, natural gas, consists of proven (5.8 tcf), and unproven (9.1 tcf), onshore reserves. This is considered reasonable due to proven offshore amounts and the potential of the area. This is also consistent with modelling carried out by CERI.

Research/Strategic Documents Referenced

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Affiliated with the Department of Geology and Geophysics
University of Calgary, 1997
Schedule of Wells
Indian and Northern Affairs Canada @ www.inac.gc.ca
Energy Statistics Sourcebook, 13th Edition, 1998
National Energy Board Gas Export Statistics
Monthly Statistics – www.neb.gc.ca
U.S. Energy Information Administration
Natural Gas Forecast @ www.eia.doe.gov
Statistics Quarterly, NWT Bureau of Statistics
GNWT – Department of Finance analysis
Daily Oil Bulletin, January 5, 2000
U.S. Energy Information Administration
Natural Gas Monthly, December, 1999
Canadian Energy Research Institute report, *"A Comparison of Natural Gas Pipeline Options for the North"*

Appendix C
Detailed Strategies

Non-Renewable Resource Development Strategy for the NWT

Introduction

The intent of the following *Detailed Strategies* is to outline the initial investments and broad actions required to effectively manage development of non-renewable resources in the NWT. As outlined earlier, mitigating the impacts of development while continuing to focus on maximizing the benefits to northerners and all Canadians presents challenges, many of which are uniquely northern.

The strategies address only the first four years of the required investment. Some strategies, especially those under *Creating The Right Environment* will naturally be completed during the four-year timeframe if the appropriate level of investment is available. Other strategies, especially those dealing with infrastructure and monitoring, will continue for many years into the future and will require some level of ongoing funding. Further analysis of future funding requirements will occur as strategies are implemented.

Strategy #1: Fast -track Devolution of Resource Management

In partnership with Aboriginal governments and claimant organizations, fast-track devolution of the land, water and resource management regime, resulting in regulatory clarity and efficiency through the following actions:

- Confirm Aboriginal government support for devolution and resource revenue sharing.
- Reach agreement and develop framework on devolution and resource revenue sharing at Intergovernmental Forum between GNWT, Canada and Aboriginal Governments.
- Develop a one-window approach for non-renewable resource development, recognizing existing land claim and self-government agreements.
- Develop an effective, balanced tax and royalty regime that ensures maximum benefits to the NWT while not providing a disincentive to developers.

Current Status

The GNWT has been seeking the transfer of provincial-type powers, programs and responsibilities for land, water and non-renewable resources from the federal government since the mid -1980s, to:

- increase benefits to the NWT and Canada by facilitating responsible development,
- retain and re-invest revenues generated by resource development in the NWT, and
- enable northerners to take control of their own future.

The key constraints to economic improvement with respect to the environment and development include: insufficient data; uncertainty about access to resources; complex environmental regulatory requirements; lack of clarity regarding the environmental review and permitting process; and a lack of clarity with respect to the tax and royalty regime.

The federal Minister of Indian Affairs and Northern Development has publicly stated his commitment to devolution and resource revenue sharing. It is proposed that devolution and resource revenue sharing could build on the work developed in the Northern Accord process, which ended in 1995, when 100% support from Aboriginal governments was not attained. However, several of the Aboriginal governments with settled land claims have indicated their desire to proceed with such a process.

Research/Strategic Documents Referenced

Draft September 6, 1994, Canada, NWT Oil and Gas, Minerals Accord

Required Action and Investment

It is anticipated that a new process for devolution and resource revenue sharing would build on previous investments. It could also involve negotiating of co-management agreements, which would see existing DIAND resources being made available to the GNWT for delivery of programs and services.

Devolution of non-renewable resource revenues to northern governments will include the management of the fiscal regime. Some mechanism will be required to establish the royalty regime. Consultation over the eventual design of the royalty regime will be necessary between the GNWT and Aboriginal groups with a right to a share in the royalties.

Although the current royalty regime for both oil and gas and minerals is competitive and may not require changes, northern governments need to complete a review of the royalty and tax regime to determine what changes, if any, could be made to both encourage development and maximize benefits to northerners. Even if no changes are made, it will be necessary to draft and enact NWT legislation to set up the royalty regime.

It is anticipated this process could take from two to four years, depending on the support provided by Aboriginal governments. Financial support would have to be made available to participating Aboriginal governments to allow for research and legal support. Of the required investment, we anticipate that approximately 50% would be spent on assisting Aboriginal organizations to obtain legal advice and support; 30% would be spent on more general research needs; and 20% would be spent on travel and meeting costs, as follows:

	Year 1	Year 2	Year 3	Year 4
Research	$300,000	$300,000	$300,000	$350,000
Legal support	$500,000	$500,000	$400,000	$450,000
Travel and meetings	$200,000	$200,000	$200,000	$200,000
Total	$1,000,000	$1,000,000	$900,000	$1,000,000

Current GNWT Investment

Prior years	Year 1	Year 2	Year 3	Year 4
$900,000	$400,000	$400,000	$400,000	$400,000

The GNWT invested $ 800,000 in the previous Northern Accord process, which ended in 1995. The expectation is a new process would build on previous work. As well, approximately $100,000 has been spent studying possible mining tax/royalty regimes, possible changes to oil and gas royalties, and the implications of possible incentive mechanisms in mining and oil and gas royalty regimes and taxes to promote northern benefits such as employment and value added activities. Funds will be required to provide legal, technical support and personnel to dedicate to this process.

Payback and Results

Transferring decision-making on resource management to the NWT will result in a more streamlined and effective regulatory regime, which should make the regulatory environment more attractive to developers.

Not only will the pace and speed of development increase, but having those most affected by development make the decisions will lead to more responsible and sustainable development. Northwest Territories residents will be more likely to support development if it can be shown to benefit them, both through jobs in resource industries, and through a

greater capacity of their governments to effectively manage development and provide services.

Royalties and federal corporate income taxes from existing proven oil and gas and mineral reserves in the NWT are estimated to exceed $12 billion over the next 20 years. These numbers do not include revenue from projected but unproven oil and gas fields in the Mackenzie Valley and Delta. Revenue from these areas would increase the above amount substantially.

As well, NWT taxes are estimated at $3.1 billion for the 20-year period. However, due to the current formula financing agreement with Canada, the GNWT would keep only about 20% of this revenue. The remainder would accrue to Canada.

Canada, the Government of the Northwest Territories and Aboriginal governments will all benefit from increased royalty and tax revenues. Industries and businesses throughout Canada will benefit from the increased activity.

Strategy #2: Advance Intergovernmental Forum

The GNWT, Aboriginal governments and Canada have agreed to participate in an Intergovernmental Forum to develop a multi-party agenda for the NWT.

The Forum will provide for ongoing dialogue among the parties to build and enhance alliances and advance discussions on:

- Devolution (northern control over northern resources)
- Resource revenue sharing
- Oil and gas development
- Mackenzie Valley Pipeline project
- New fiscal relationship with Ottawa
- Northern economic development strategy
- Capacity building

Current Status

The GNWT has established a Secretariat to coordinate GNWT participation in this initiative. A tripartite meeting of the Forum was held on May 5, 2000. Officials representing Canada, the GNWT and the Aboriginal Summit continue to meet on the above issues with the aim of producing Framework Agreements to be approved at the next Intergovernmental Forum.

Required Action and Investm ent

The GNWT is not seeking additional funding for the costs of the GNWT establishing a Secretariat to support GNWT participation in the Intergovernmental Forum. However, investments are required by the federal government and the GNWT to build the necessary capacity for Aboriginal organizations to participate in these processes. Federal and GNWT officials have met with Aboriginal organizations on a number of occasions to discuss the requirement for funding to establish an Aboriginal Governments Secretariat that provides technical and administrative assistance to all Aboriginal governments. The proposed contribution of $1 million per year would be cost shared by the federal government ($667,000) and the GNWT ($333,000).

Year 1	Year 2	Year 3	Year 4
$915,000	$1,158,000	$1,158,000	$1,158,000

Current GNWT Investment

Prior years	Year 1	Year 2	Year 3	Year 4
$200,000[1]	$582,000[2]	$825,000	$825,000	$825,000

1. GNWT-funded meetings with Aboriginal leaders (Dene, Metis, Inuvialuit) in order to provide information and consult on GNWT's recommended approach for resource development, and began to establish the IGF Secretariat by hiring staff.
2. Reflects costs of establishing and increasing the capacity of the IGF Secretariat to deal only with ongoing issues. Additional costs are anticipated in order to support and enhance the GNWT's relationship with Aboriginal governments.

Payback and Results

- Building partnerships among northern governments
- Sharing northern benefits
- Building northern consensus to advance devolution, resource development, resource revenue sharing
- Creating a political climate to advance development

Strategy #3: Clarify Policy Direction and Northern Benefits Expectations

Enhance clarity with respect to the non-renewable resource development environment within the Northwest Territories, and complement the devolution of the land, water and resource management regime (Strategy #1) by:

- Developing a Non-renewable Resource Development Policy which outlines NWT strategic interests in development of resources and pre-conditions for GNWT support; and
- Clarifying specific northern and Aboriginal benefits expectations.

Current Status

Many industrial projects will have wide-ranging impacts in areas such as infrastructure, health and social services, culture, education and training, and small business support. They also have the potential to affect biophysical assets, such as wildlife, over which the GNWT has statutory authority.

Broadly speaking, the GNWT has interests related to resource development, including the following:

- Protect environmental sustainability
- Maximize territorial employment (primary industry)
- Maximize business opportunities (primary industry)
- Promote secondary industry
- Encourage developers to monitor and mitigate impacts in areas of Aboriginal government interest
- Work with developers to monitor and mitigate impacts in areas of territorial interest
- Ensure fiscal sustainability
- Maintain a competitive position that will maximize NWT opportunities.

In addition to clarifying its interests, the GNWT is moving toward standard objectives for environmental assessment follow-up programs. Increasingly, the GNWT is drawn to agreements that provide for:

- measurable commitments
- collaboration among all stakeholders to focus GNWT programs for maximum effectiveness
- reporting of efforts to meet commitments, and results
- adaptive management if unable to meet commitments
- legal certainty / assurance that efforts and commitments will continue over many years, regardless of who owns the project.

With respect to benefits expectations, land claim agreements provide for Impact and Benefit Agreements (IBAs) to varying degrees. There are similarities across land claims, and it also appears the elements included in IBAs are becoming more specific over time. Whether negotiated in settled or unsettled land claim areas, IBAs derive their authority from Aboriginal rights and entitlement, and are designed to protect the interests of an Aboriginal government and its beneficiaries. Work has also been done to clarify specific northern and Aboriginal benefits expectations, focussing on unsettled land claim areas.

The GNWT's most recent experience in clarifying benefits expectations has been in negotiating follow-up programs for the Diavik project. The GNWT absorbed consultation costs on socio-economic issues, to facilitate the involvement of affected Aboriginal governments in the negotiation process. To ensure Aboriginal governments have the fullest opportunity for a meaningful, ongoing role in monitoring the socio-economic performance of the Diavik mine, the GNWT is sharing the cost of a multi-party regional Advisory Board. If successful, there may be an opportunity to extend this Board to other projects, and it might become a model for other regional oversight boards.

Federal regulatory authorities have also recognized that a process is needed to enable ongoing and meaningful collaboration. Establishing a workable process will require consultation and consensus-building in each NWT region. Best-practice research and options for boilerplate agreements would provide a solid basis for discussing interests and possible solutions, and would facilitate a productive consultation process.

Required Action and Investment

Developing a broadly accepted approach to non-renewable resource development in the NWT, as well as clarifying specific benefits expectations, will require the following actions:

- Consult with and involve Aboriginal governments, the general public, and public interest organizations.
- Undertake research (i.e. best practices) and policy development.
- Implement consultation results, which may include establishment of ongoing oversight bodies.
- Maintain, and work to improve, mechanisms already in place to enable informed resource management, such as monitoring under the existing socio-economic agreements.

Agreement will need to be reached on issues affecting the distribution of benefits throughout the NWT. Some organizations will require financial support in order to participate effectively, and Aboriginal organizations may require financial assistance to adequately consult with their constituencies.

The following annual investments will be required:

Consultation and consensus-building	$700,000 per year
Research and policy development	$300,000 per year
Staff wages and benefits	$120,000 - $130,000 per year
BHP socio-economic agreement	$10,000 - $30,000 per year
Diavik socio-economic agreement	$20,000 - $30,000 per year
Diavik Socio-economic Advisory Board	$250,000 per year
Diavik Environmental Monitoring Board	$50,000 per year, two years

The first four years' funding requirements are summarized below:

Year 1	Year 2	Year 3	Year 4
$1,480,000	$1,470,000	$1,420,000	$1,410,000

Current GNWT Investment

Prior years	Year 1	Year 2	Year 3	Year 4
$1,450,000	$680,000	$670,000	$610,000	$600,000

Payback and Results

A consistent GNWT position on non-renewable resource development should improve the stability of the investment climate in the NWT, a frequently cited concern of proponents. Policy guidelines which clarify northern and Aboriginal benefits expectations, elaborated early in the process, should save proponents both time and money in proceeding through the regulatory process towards development. Proponents will be afforded the opportunity to design their follow-up programs prior to regulatory review, with the assistance of GNWT technical staff. Specific areas in which consistency and clarity will be improved include GNWT and Aboriginal expectations regarding:

- Direct employment (primary industry)
- Business opportunities
- Value-added opportunities
- Social and economic infrastructure
- Equity participation
- Proponents' responsibility for negative impacts within their control.

Strategy #4: Market and Promote NWT Resources

Market and promote the advantages and benefits of developing NWT resources nationally and internationally to numerous stakeholders through the following actions:

- Develop and implement marketing strategies to promote construction of a Mackenzie Valley Pipeline, specifically targeting the U.S. Government, Government of Canada, State of Alaska, North Slope Borough, provinces, business and industry, environmental groups and Aboriginal groups, based on the following key messages:
    - NWT is "open for business"
    - NWT political climate is more stable than was previously the case and supports development
    - NWT development is "ethical development" conducted in full partnership with Aboriginal people
    - Mackenzie Valley pipeline route is less disruptive to the environment than alternative routes
    - Mackenzie Valley pipeline route will be cheaper, resulting in higher profits to producers, and tax benefits to Canadian and U.S. jurisdictions
    - Mackenzie Valley pipeline will stimulate the economy and provide benefits to Canada. A large portion of the benefits from infrastructure and resource developments accrue to the provinces.
- Undertake research needed to support the messages, such as the recently completed study by the Canadian Energy Research Institute on merits and benefits of a Mackenzie Valley Pipeline for Canada
- Develop national and international marketing strategies for other NWT resource sectors, e.g. diamonds.

Current Status

The Cabinet of the 14th Legislative Assembly has been actively promoting the advantages of a Mackenzie Valley pipeline, including meeting with petroleum industry representatives, and speaking at such venues as the Calgary Chamber of Commerce, and the Prospectors and Developers' Association of Canada.

One recent initiative was the completion of a study by the Canadian Energy Research Institute (CERI) that outlines the benefits for Canada of a Mackenzie Valley Pipeline.

A comprehensive marketing strategy targeting key audiences must be developed with sufficient resources for: lobbyists, staff resources, travel, development and distribution of promotional materials. This strategy must be developed and implemented as soon as possible, so as to be adequately prepared to promote the benefits of a Mackenzie Valley pipeline.

The promotion of the NWT as a diamond centre is a critical part of developing the resource sector, and the associated value added potential. In order to attract credible, high quality people and investments to the NWT, we must undertake promotion and marketing of our

territory. In addition, the marketing of NWT diamonds (both rough and polished) will be an important part of any marketing strategy. Part of this will involve the GNWT playing a key role in certification of diamonds as being from the NWT or Canada. We must market the benefits of value-added for all players, and also create a premium for northern manufactured diamonds, that reflects their higher value and uniqueness.

Required Action and Investment

Proactive and aggressive promotion of the advantages and benefits of resource development in the NWT is needed to attract development, and upfront marketing expenditures requires immediate attention. Building support for a Mackenzie Valley pipeline will be the critical, immediate focus of promotional efforts, requiring substantial resources over the next two years. At the same time, marketing of all aspects of the diamond industry continues to be a priority for the GNWT, and will require even more attention as the second and third diamond mines begin production.

Thus expenditure projections for the current and next fiscal years reflect the considerable marketing and promotional attention both sectors will need. In the third and fourth years, it is anticipated that the momentum created by implementation of the marketing strategy and the projected increase in resource development will lead to stabilization of marketing expenditures.

There is also a need to ramp up existing promotional activities for NWT minerals development, including:

- Establish a marketing and certification program for NWT polished diamonds.
- Develop and expand websites that provide readily accessible geological information. This will have to be linked to Strategy #6, which promotes mineral development from a more technical perspective (supports for prospectors grubstake/mineral exploration and geoscience database).
- Develop and implement a strategy to inform potential investors of the merits of NWT resource development.
- Increase participation in trade shows and industry symposia catering to the international and national resource development industry.

Year 1	Year 2	Year 3	Year 4
$1,000,000	$1,000,000	$600,000	$600,000

Current GNWT Investment

Prior years	Year 1	Year 2	Year 3	Year 4
$540,000	$250,000	$150,000	$100,000	$100,000

Payback and Results

Development and implementation of a comprehensive resource development marketing strategy for the NWT will ensure that:

- Stakeholders, industry, investors and interest groups are aware of the nature and potential for development in the NWT and know what to expect when doing business in the NWT
- The advantages of resource development in the NWT are clearly articulated
- Increased resource development activity, including the discovery and development of mines, leads to significant job opportunities (see Appendix D)
- Potential for increased roads and infrastructure as a by-product of development – momentum for both base metal and oil and gas (pipeline) exploration will continue to increase with adequate infrastructure in place
- Business development increases to support resource development – marketing could encourage and assist the 200 or more new businesses that are projected to be established in the NWT annually
- Canada will realize significant increases in NWT royalty revenues as mineral development proceeds and increases
- Efforts to support the Mackenzie Valley route for a pipeline will result in maximized benefits to Canadians and northerners, both during construction and after, because more of this route is within Canada. (More Canadian companies, labour, construction materials, supplies, etc. would be used)
- Development of premium NWT products derived from NWT resources, resulting in increased exports.

Strategy #5: Develop a Skilled, Available Workforce

Current Status

Non-renewable resource development provides a range of employment and training opportunities for northerners seeking work in this sector. Many jobs, however, require technical and academic skills that the NWT workforce has yet to acquire. Unemployment rates ranging from 10% in larger communities to 40% in communities along the Mackenzie Valley are a partial reflection of the "skills gap". Educational and training programs are key to narrowing the margins.

Young people are particularly challenged in finding, getting and keeping jobs. Overall, the youth unemployment rate is more than double that of the adult population – 26% vs. 11%. There are clear differences between the labour market experiences of Aboriginal and non-Aboriginal youth. Where non-Aboriginal youth have an unemployment rate of 13%, the Aboriginal youth rate is 40%. Overall, the unemployment rate for Aboriginal residents is 27%, compared with 6% for non-Aboriginals.

With nearly 5,000 jobless northerners, immediate and future actions must be concentrated on building labour force skills.

There are three key challenges to labour force development in the NWT:

- Basic education levels must be improved
- More northerners must be trained in professional/technical occupations
- More jobs must be created that the workforce in smaller communities can access.

While there are interventions addressing these issues, resources are not sufficient to enable northerners to take full advantage of opportunities. Incremental support is needed.

The following is a summary of current activities:

Mining: Current programs include academic readiness and workplace orientation programs, pre-employment skill training, apprenticeship programs, heavy equipment programs, and specialized industry training. Additionally, Aurora College programs train workers for various administrative functions in the industry.

Oil and Gas: Programs include industry driven pre-employment training in safety and the handling of dangerous goods, equipment training, pipeliner/operator training, camp attendant and camp cook training.

In addition, a *Literacy Strategy* is under development which will ensure community residents have basic literacy skills required to access employment.

Research/Strategic Documents Referenced

Summary of Investments in the Mining Industry 1996/97 –1999/00.

Human Resource Development Proposal for the Oil and Gas Industry in the NWT

Required Action and Investment

Mining: Current investments of approximately $1.1 million will continue. Budgets are spread over training for primary and support industries, as well as research and development, standards development, and career development. Secondary (diamond cutting) and tertiary (jewellery making) industries also receive support. Current investments will result in:

- 170 graduates annually from skill and trades related training programs in the primary and support industries
- 20 graduates annually from diamond cutting program
- 15 graduates annually from jewellery making program.

An additional $300,000 will support 18 trainees annually in an enhanced Occupational Training-on-the-Job program.

Oil and Gas: Current investments of $140,000 annually in college-based pre-employment and skill training will continue. As well, $30,000 in training is provided through regional offices to support on-the-job training, and for fiscal 2000/2001, a base budget adjustment of $500,000 has been approved. Total number of students accessing programs is approximately 100 per year.

Incremental funds are needed to support additional human resource planning, career development promotional activities, industry and career related training and evaluation. Annually $2.42 million will be targeted as follows:

- Human Resource planning $350,000(Years 1-3) $250,000(Year 4)
- Career Development Promotion $45,000
- Industry Specific and Career Oriented Training

Apprenticeship	$10,000 x 50 apprentices = $500,000
Diploma programs	$10,000 x 30 students = $300,000
Adult Basic Education	$5,000 x 40 students = $200,000
Skill training	$5,000 x 60 students = $300,000
Training-on-the-job	$16,000 x 25 students = $400,000
Pre-employment	$5,000 x 20 students = $100,000

Total number of graduates annually will be 225

- Evaluation and Support $225,000

The resource sector is expected to generate an additional 1500-2000 jobs, (see Appendix D). Clearly, additional funding is critical to ensure northerners are positioned to take advantage of these opportunities.

Required Investments

	Year 1	Year 2	Year 3	Year 4	Total
Mining[1]	$1,400,000	$1,400,000	$1,400,000	$1,400,000	$ 5,600,000
Oil & Gas[2]	$3,090,000	$3,090,000	$3,090,000	$2,990,000	$12,260,000
Total	$4,490,000	$4,490,000	$4,490,000	$4,390,000	$17,860,000

1. Based upon 4-year period, 1996-97 to 1999-00: See Summary of Investments in the Mining Industry 1996/97 –1999/00. (These amounts were incremental to base funded education and training programs.)
2. Based on 4-year period, 1996-97 to 1999-00: see Aurora College approved programs services plans.

Current GNWT Investment

	Prior years	Year 1	Year 2	Year 3	Year 4
Mining	$2,928,350[1]	$1,100,000	$1,100,000	$1,100,000	$1,100,000
Oil & Gas	$345,000[2]	$670,000[3]	$670,000	$670,000	$670,000
Total	$3,273,350 [2]	$1,770,000 [3]	$1,770,000	$1,770,000	$1,770,000

1. Based upon 4-year period, 1996-97 to 1999-00: See Summary of Investments in the Mining Industry 1996/97 –1999/00. (These amounts were incremental to base funded education and training programs.)
2. Based on 4-year period, 1996-97 to 1999-00: see Aurora College approved programs services plans.
3. In 2000-2001 base budget additional $500,000+ $170,000 continued funding

Payback and Results

Developing a skilled workforce will contribute to:

- over 500 northerners benefiting from training and employment programs annually, (includes both mining and oil and gas programs)
- projected decrease in unemployment rate of up to 50% in high activity seasons
- a projected decrease of 30% in Income Support expenditures in impacted communities, based upon experience from recent developments.

Strategy #6: Incentive Programs for Mineral Exploration

Promote increased mineral exploration through incentive programs and the preparation of a modern, integrated geoscience database.

Current Status

Although exploration activity has been brisk in recent years, the Slave Geological Province exploration activity is decreasing. The exploration industry in the NWT is in need of a boost. New grass roots exploration in the NWT is required to sustain the level of expenditures that have been realised in recent years. Without sustained exploration there will be no new mines in the near future, and less interest in petroleum lands. The NWT competes in a global market for exploration investment. Interest in diamonds in the Slave Geological Province and gas in Fort Liard will decline over time. New areas of interest are required to replace these.

Existing exploration incentive programs: The GNWT currently promotes mineral exploration through the Prospector Grubstake Program. In 1999, seventeen NWT prospectors were supported, with a total budget of $75,000. The average grubstake contribution is $3,500 with a maximum of $8,000. The funding is typically used to pay for air charters to remote areas, analyses of samples and basic supplies.

NWT Prospectors supported through the existing Grubstake Program participated in the Yellowknife Geoscience Forum, by displaying their results and discussing with industry. These discussions generated interest and resulted in one option agreement between a prospector and a mining company to do further work on the property. A larger investment could lead to more such agreements.

Demand for enhanced exploration incentives: Although the 1999-2000 budget for the Prospectors' Grubstake program was $75,000, the demand for funding totalled $246,000. The high demand for support is due in part to the recent training in three NWT communities and to fewer mining exploration dollars in circulation. The demand is expected to continue as more communities request and receive training.

Once a prospector has discovered a mineral showing, significant costs are incurred to develop and assess the prospect. This assessment typically includes cost-intensive methods such as geophysics surveys, geochemical surveys, diamond drilling, etc. There is currently no support available for prospectors and junior mining companies to undertake these activities.

Geoscience database: The current state of geoscience in the NWT is incomplete, out of date and largely inaccessible. This is especially true of the areas in which Aboriginal land claims have been settled to date. Other mineral-rich provinces such as Ontario and Quebec have complete geological mapping coverage, something that cannot be said of the NWT. Ontario is part way through a geoscience program titled "Operation Treasure Hunt" worth $19 million over two years, aimed at improving the geoscience database in mineral-rich areas of Northern Ontario.

Most geoscience data is available in paper format only, which is not an incentive to current analysis by exploration companies. There are no up-to-date regional surveys – most government data was collected in the 1960s using now-outdated equipment. Modern surveys use current equipment and produce digital databases that can be easily integrated with other data (e.g. company files, local surveys). Digital data can be quickly and easily distributed via the Internet compared with the time taken to obtain paper maps.

Research/Strategic Documents Referenced

Northwest Territories Economic Framework Sector Profiles: Minerals and Oil and Gas – Resources, Wildlife and Economic Development, GNWT, 1997.

Required Action and Invest ment

- Enhance the existing Prospectors' Grubstake Program
- Develop and implement an Advanced Mineral Exploration Program
- Produce a modern, integrated geoscience database to support exploration investment
- Assist Aboriginal groups to delineate the geological potential of Aboriginal-owned subsurface lands.

$175,000 per year will be used to enhance the existing Prospectors' Grubstake Program. Based on demand trends over recent years, this amount should be sufficient to address all requests for support, and promote the discovery of mineral showings.

An additional $775,000 per year will be used to fund the proposed Advanced Mineral Exploration Program. The Advanced Mineral Exploration (AMEX) Program would assist northern prospectors and northern-based junior mining exploration companies to evaluate a target or area which requires further exploration based on known and documented results. The purpose is to aid in defining whether the target areas will make viable mining operations by providing support during this evaluation stage of exploration. Significant mineral discoveries made under the individual Prospectors Grubstake Program can be advanced through this program.

Approximately $4.5-$5 million is required to collect and process survey data for each of the Inuvialuit Settlement Region and the Gwich'in Settlement Area (Years 1 and 2). This will provide coverage of the mainland part of the ISR (excluding Tuktut Nogait National Park) and the majority of the GSA. The product will be a digital geophysics database available through the Internet and on CD.

To survey the Sahtu Settlement Area will require another $9 - $10 million, which will provide coverage outside the mountainous areas and excluding Great Bear Lake and the candidate protected areas of Grizzly Bear Mountain and the Scented Grass Hills. This will be done in years 3 and 4 of the program. Product will be as for the GSA and ISR – digital data available via the Internet or CD.

The second part of this strategy will require a smaller budget, likely in the $500,000 per year range, depending on location and available information. This will be targeted initially at the Sahtu Settlement Area, beginning with the Colville Lake region. This money will cover the

cost of a GIS data specialist who can compile all data (existing and newly obtained) into a single electronic database and work with community representatives to enable them to understand the geological potential of their land. This will involve gathering of data (which may entail considerable travel), purchase of some data, and converting older data to digital format. Travel to relevant communities to explain the results of the work will also be required on a regular basis. The product from this work will be an integrated GIS database of all information publicly available (geophysics, including seismic, geological mapping, well logs etc.) which can be used to target potential exploration areas, for land-use planning, and to develop more detailed geological studies.

Total required investment is as follows:

Activity	Year 1	Year 2	Year 3	Year 4
Prospectors Grubstake Program	$250,000	$250,000	$250,000	$250,000
AMEX Program	$775,000	$775,000	$775,000	$775,000
Geoscience Database Activities	$5,000,000	$5,000,000	$5,000,000	$5,000,000
Total	$6,025,000	$6,025,000	$6,025,000	$6,025,000

Current GNWT Investment

The only current GNWT investment is for the existing Prospectors' Grubstake Program.

Prior Years	Year 1	Year 2	Year 3	Year 4
$75,000/year	$75,000	$75,000	$75,000	$75,000

Payback and Results

With the requested funding:

- 47 prospectors assisted through Grubstake Program
- 20 prospectors and/or junior mining companies assisted through Advanced Mineral Exploration Program.

Spin-off business impacts:

- Temporary local hires (line cutters, claim-stakers, geologists)
- Purchased services (word processing, drafting, expediting, geophysical survey)
- Direct purchases (shipping, sample bags, food and supplies)
- Equipment rental (boats, motors, ATV's)
- Airline charters (fixed wing and helicopter).

The geoscience investment will result in a modern, integrated, detailed database that will attract industrial activity. Longer-term benefits will also include:

- Demonstrated GNWT commitment to the resource industry
- Increased exploration investment resulting from a modern geophysics database, enabling new targets to be selected for exploration

- Sustaining exploration interest to maintain the resource industry cycle for future developments (alleviating the boom-bust cycle)
- A product which can be used for a number of purposes, including land-use planning
- Increased interest in Aboriginal subsurface lands leads to increased promotion and interest in Crown lands (has been demonstrated in ISR).

Strategy #7: Provide Reliable Land Access/Transportation Infrastructure

Create significant opportunities and benefits for northern resource development through improvements to transportation infrastructure by:

- rehabilitating and upgrading existing highways
- making strategic investments in two northern transportation corridors, and
- studying ways in which to leverage partnerships with industry and other governments in the development and enhancement of transportation infrastructure.

Current Status

The enormous potential for mineral and oil and gas development in the Northwest Territories has already been discussed. A major factor that impedes non-renewable resource development in the Northwest Territories is the lack and inadequacy of surface transportation infrastructure.

For example, three-quarters of the area of the Northwest Territories does not have all-weather road access. In the Mackenzie Valley, the all-weather road stops at Wrigley. The winter roads are not adequate for the anticipated industrial traffic related to oil and gas exploration and development. Global warming is threatening to shorten the already brief season during which the winter roads are available.

In the Slave Geologic Province north of the Great Slave Lake, the existing winter road may be running out of capacity for industrial traffic. Again, global warming is a threat to the continued reliability of this winter road.

All-weather roads in the Mackenzie Valley and the Slave Geologic Province will reduce transportation costs, increase reliability and certainty, and improve traffic safety. The result would be acceleration of exploration and development, and increased likelihood of making marginal mineral and oil and gas deposits profitable.

Increased exploration and development activity has put a strain on the existing NWT transportation infrastructure. Increased industrial traffic is causing deterioration at a faster rate than current GNWT resources can accommodate. While this activity has affected all highways, the problem is most clearly demonstrated by the examples of the Yellowknife Highway and the Liard Highway.

With only limited available capital, some improvements related to safety and surface conditions are being made on the Yellowknife, Liard and Dempster Highways. However, these investments are not maintaining the status quo. National Highway Program funding is currently being sought to alleviate some of the pressures caused by increased development activity.

In the 1990 Northwest Territories Transportation Strategy, the GNWT identified long-term needs and priorities for the transportation infrastructure required to promote, support and serve resource development. The Transportation Strategy was updated in 1995. Both of

these documents identified the need for an all-weather road in the Mackenzie Valley and the Slave Geologic Province.

In 1999, the GNWT invested $2 million in a comprehensive Highway Strategy. The vision and plan of action for road development in the NWT has been incorporated in the report *"Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories."* Under the Highway Strategy initiative, the preliminary work on planning, economic, environmental and engineering work was conducted for the Mackenzie and Slave corridors, with a view to readying them for construction. The Mackenzie Valley all-weather road has since been given a high priority by the GNWT.

An Inuvik-to-Tuktoyaktuk highway needs to be considered as well. This may make sense to facilitate access to the Mackenzie Delta gas fields.

The major hurdle in building these corridors is the lack of funding. The development of new roads in the Northwest Territories is an acknowledged federal responsibility. As the GNWT does not have the resources to undertake such projects alone, it is essential that federal assistance with development funding be provided.

The GNWT will also study ways in which the development of infrastructure can be coordinated with industry. This could lead to possible leveraging scenarios and economies of scale related to industry resource development proposals. In various discussions with the oil and gas and pipeline companies, it has been pointed out that concurrent development of roads and pipelines will produce significant economies of scale.

Research/Strategic Documents Referenced

Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories.

Required Action and Investment

1. Strategic investments in two northern transportation corridors: In Phase 1, immediate improvements are required to increase the length of the winter road season; and in Phase 2 the corridors need to be upgraded to all-weather road standards.

> *Mackenzie Valley Road Corridor from Wrigley to Dempster Highway to the Arctic Ocean (1000 km):* Completion of this road to an all-weather standard is a high priority. An all-weather road will improve accessibility, reliability, productivity and safety for resource exploration and development, train local workers for employment, and promote business opportunities in the oil and gas and mining industries, encourage tourism, reduce the cost of living in the communities served and provide for safer and cheaper inter-community travel.
>
> > *Phase 1:* Extend the operating season for the existing winter road by building permanent bridges on stream crossings and improving the grade in selected locations. The existing winter road has a very limited season, and global warming trend is threatening to shorten it further.

Phase 2: Construct an all-weather road from Wrigley to Tuktoyaktuk.

Slave Geologic Province Road Corridor from Yellowknife/North Slave to the Nunavut Border (450km): The Slave Geologic Province is considered to be richer in potential than the Abitibi Geologic Region that spans northern Ontario and Quebec, where over 200 mines have been developed over the last 100 years. One of the main impediments to mineral development is the lack of surface access. The current winter road has a limited season, and global warming is threatening to shorten it further. The industrial capacity of the road is also becoming an issue.

Phase 1: Extend the operating season of the existing Lupin winter road and increase the duration and reliability of the Mackenzie River ice-bridge on the Yellowknife Highway by selective upgrading of critical sections.

Phase 2: Construct an all-weather road

2. Invest in the rehabilitation and upgrading of existing highways: This is needed to provide the required reliability and safety of service to resource exploration and development. The condition of the existing highways poses safety and reliability problems to resource-related traffic and necessitates weight restrictions on trucks serving resource exploration and development. It is expected that unless roads are improved, additional restrictions on industrial traffic (such as reduced speeds, restricted hours of operation, seasonal bans) may have to be imposed. The following projects have been identified as required investments:

a) Yellowknife Highway serving the Slave Geologic Province (reconstruction and paving of the last remaining gravel section between Rae and Yellowknife)
b) Ingraham Trail serving the Slave Geologic Province (upgrading to improve safety and design deficiencies)
c) Liard Highway from the BC border to the Mackenzie Highway serving gas exploration and development (reconstruction/rehabilitation to improve surface condition and load-carrying capacity)
d) Mackenzie Highway from the Alberta border to Wrigley serving oil and gas exploration and development (rehabilitation to improve surface condition)
e) Dempster Highway from the Yukon border to Inuvik serving Mackenzie Delta oil and gas exploration (reconstruction/rehabilitation to improve surface condition and load-carrying capacity)

Required investment

A more detailed breakdown of the required investment is attached. Totals are summarized here:

Year 1	Year 2	Year 3	Year 4
$41 million	$43 million	$43 million	$43 million

It should be noted that the above investment represents work required in preliminary stages. An additional investment of $848 million will be required in future years to complete construction of all-weather roads up the Mackenzie Valley and along the Slave Geologic Province Corridor.

Current GNWT Investment (Capital Allocation, Highways)

Prior Years (90/91 -00/01)	2000-2001	2001-2002	2002-2003	2003-2004
220.8 ($20m/year)	$15.7 million	$17.4 million	$17.1 million	$17 million

Payback and Results

As previously discussed, the federal government currently receives most of the royalties and taxes from resource developments in the NWT. Thus, any federal investments in infrastructure for resource developments will get returned several times over in a short time. It is therefore in the federal interest to support the building of infrastructure that resource exploration and development in the NWT requires.

Provinces are also significant beneficiaries through employment and industrial spin-off effects. A 1994 Conference Board of Canada study concluded that because the NWT imports most services, equipment and expertise, only 26 percent of the employment benefits of road and resource developments in the NWT accrue to the NWT. The remaining 74 percent goes to the provinces, with Ontario getting 31 percent, Alberta 20 percent, Quebec 12 percent, and BC 8 percent.

In addition to facilitating development and realizing the significant fiscal and economic benefits discussed, there are significant social and quality-of-life benefits associated with infrastructure development:

- More reliable, less expensive access to remote communities, lowering the cost-of-living.
- Training of local people in skills directly transferable to oil and gas and mining industries.
- Enhanced business development opportunities.
- Enhanced tourism.
- Cheaper and safer inter-community travel.

Required Investment, Detailed Breakdown ($million)

Strategy Component	Year 1	Year 2	Year 3	Year 4	Future Years
1. Construct New Corridors					
Make strategic investments in two northern transportation corridors, which will create significant opportunities and benefits for northern resource development. In Phase 1, immediate improvements are required to increase the length of the winter road season; and in Phase 2 the corridors need to be upgraded to all-weather road standard.					
Mackenzie Valley Road Corridor from Wrigley to Dempster Highway and the Arctic Ocean (1000 km)					
Phase 1: Extend the operating season for the existing winter road by building permanent bridges on stream crossings and improving the grade in selected locations. The existing winter road has a very limited season – the global warming trend is threatening to shorten it further.	5	5	5	5	-
Phase 2: Construct an all-weather road from Wrigley to Tuktoyaktuk, (estimated cost = $500 million). Undertake initial planning, engineering and environmental studies. Obtain Land Use Permits and environmental approvals. Once approved, begin construction.	10	10	10	10	460
Slave Geologic Province Road Corridor from Yellowknife/North Slave to the Nunavut Border (450km)					
Phase 1: Extend the operating season of the existing Lupin winter road and the Mackenzie River ice crossing at Fort Providence by selective upgrading of critical sections.	1	1	1	1	-
Phase 2: Begin detailed engineering and environmental work. Obtain Land Use Permits and environmental approvals. Construct an all-weather road (estimated cost = $250 million)	-	-	-	-	250

2. Upgrade Existing Corridors Invest in the rehabilitation and upgrading of existing highways needed to provide the required reliability and safety of service to resource exploration and development. The condition of the existing highways poses safety, reliability problems to the resource-related traffic and necessitates weight restrictions on trucks serving resource exploration and development.					
a) Yellowknife Highway serving the Slave Geologic Province: reconstruction and paving of the last remaining gravel section between Rae and Yellowknife (estimated cost = $66 million)	12	12	12	12	18
b) Ingraham Trail serving the Slave Geologic Province: upgrading to improve safety and design deficiencies (estimated cost = $20 million).	1	3	3	3	10
c) Liard Highway from the BC border to the Mackenzie Highway serving the gas exploration and development: reconstruction/rehabilitation to improve surface condition and load-carrying capacity (estimated cost = $60 million)	5	5	5	5	40
d) Mackenzie Highway from the Alberta border to Wrigley serving the oil and gas exploration and development: rehabilitation to improve surface condition (estimated cost = $28 million).	2	2	2	2	20
e) Dempster Highway from the Yukon border to Inuvik serving the Mackenzie Delta oil and gas exploration: reconstruction/rehabilitation to improve surface condition and load-carrying capacity (estimated cost = $70 million)	5	5	5	5	50
Total (1 and 2)	**41**	**43**	**43**	**43**	**848**

Strategy #8: Implement an Effective, Responsive Legislative Regime

Implement and manage an effective, responsive legislative and regulatory regime for land, water and resource management achieved through devolution.

Current Status

As discussed under Strategy #1, legislative authority and supporting regulatory agencies for resource development in the NWT are currently the responsibility of the Government of Canada. Relevant legislation for land rights, environmental review, resource management, etc. are all under federal jurisdiction.

Once Strategy #1 is effectively completed, it will be the responsibility of the GNWT and partner Aboriginal governments to manage the regime.

Required Investment

As devolution will involve program transfers from the federal government, it is critical that resources required to manage the regime will be received as adjustments to the GNWT's base through the Formula Financing Agreement with Canada.

Payback and Results

Moving decision-making on resource management to the NWT will result in a more streamlined and effective regulatory regime, which should make the regulatory environment more attractive to developers.

Having those most affected by development make the decisions will lead to more responsible and sustainable development.

Development will maximize benefits and opportunities to northerners, while also contributing to the benefit of mainstream southern Canada. Canada, the Government of the Northwest Territories and Aboriginal governments will all benefit from increased royalty and tax revenues. Industries and businesses throughout Canada will benefit from the increased activity.

Strategy #9: Mitigate Social Impacts of Development

Mitigate impacts of moving to a non-traditional economy, especially where jobs are located at remote work sites, by ensuring support programs are available, through the following actions:

- Recruitment and retention – Ensuring sufficient front-line staff (i.e. nurses and social workers) are in place in affected communities;
- Equipping Front-Line Staff: Ensuring services delivery personnel are adequately resourced and capable of dealing with increased caseload;
- Researching, developing and initiating three pilot projects, one in each of the following areas: Addictions
    - Child Welfare/Protection
    - Family Counselling

Each pilot project will be developed separately. Common program themes will include:

Education: Promoting active lifestyles, healthy mental and physical development, building self esteem;

Promotion: promoting an active, addiction free lifestyle, identifying positive growth and development, and making the right choices;

Support Programs: parenting support, daycare assistance, addictions counselling, money management;

Community Awareness: securing support from community leaders and Elders, raising awareness within the community; and

Aftercare: ensuring adequate treatment follow-up programs are in place.

Current Status

In a stable social and economic environment, increased employment generally leads to a reduction in dysfunctional behaviour. However, history has shown that during a period of rapid development, the demands of entering the wage economy, and the affluence associated with employment and work rotations, can aggravate existing problems such as alcohol and drug abuse, child neglect and abuse, sexually transmitted diseases, spousal abuse, and suicide. Given that the current health and social services system is operating at the limits of its capacity, the effects that resource developments are likely to have on the social safety net in the NWT are expected to be profound.

These social indicators of development were tracked by the GNWT and others in communities affected by the Beaufort-Delta oil and gas developments of the 1970s, the construction of the Norman Wells to Zama pipeline, and the Ekati Mine. Based on these experiences, increased pressures on GNWT programs and services are expected to arise from: daycare needs; spousal assault and marriage counselling; child protection and foster care; money management counselling; mental health services as well as addictions treatment and counselling. Pressures on addiction programs are expected to arise not only from alcohol use, but also from gambling and, increasingly, drug and other substance abuse. In

the future, community based elder care may also become an issue as resident employees will be working at remote sites and may no longer be available to provide these services.

A recent study completed by Price Waterhouse Coopers in the community of Fort Liard shows marked increases in both alcohol consumption and alcohol related crime (incidents of alcohol related crime have almost tripled in the last year). Based on experiences with previous development projects (Norman Wells and Tuktoyaktuk), similar circumstances are likely to occur in communities where a large proportion of residents access employment opportunities at remote resource developments. These trends will not only place immediate pressures on the current system, with increases in child abuse and neglect, family breakdown and spousal assault, but could have long-term effects, including fetal alcohol syndrome (FAS) and fetal alcohol effect (FAE).

Proactive investments now will help to reduce future costs associated with these impacts, e.g.

- the costs of maintaining adults with FAS in care,
- costs of addictions treatment,
- costs imposed on the justice and health systems by youth and adults with FAE.

In addition, it is anticipated that the GNWT may experience some increased costs associated with medical travel.

Required Action and Investment

Three proposed pilot projects will be phased in over the next three years. In addition, front-line workers will be added as required to address the anticipated pressures from increased development. Incremental spending is proposed as follows:

	Year 1	Year 2	Year 3	Year 4
Pilot projects	$1,000,000	$1,000,000	$1,000,000	
Increased front-line social work staff [1]	$300,000	$600,000	$600,000	$600,000
Increased health care reps.[2]	$300,000	$600,000	$600,000	$600,000
Training	$200,000	$200,000	$200,000	$200,000
Total	$1,800,000	$2,400,000	$2,400,000	$1,400,000

1. Additional social worker positions will be added to two communities in 2000-2001 (Fort Liard and another Slave Geological Province community), and to two more communities in 2001-2002
2. Additional health care representatives will be added as above.

Projected staff costs include salaries, benefits, recruitment, removal assistance, travel and other O&M

Note: The above amounts reflect planning and development costs for anticipated impacts, as well as front-line staff increases in areas currently experiencing impacts of exploration. If large-scale projects such as a Mackenzie Valley pipeline proceeds, there will be increased demand for community support funding and additional front-line staff in future years.

Current GNWT Investment

Existing pressures on social program budgets have constrained the GNWT's ability to make the additional proactive investments required to adequately prepare for these impacts.

Prior years	Year 1	Year 2	Year 3	Year 4
0	0	0	0	0

Payback/ results

The payback will be realized in avoidance of social ills and in downstream cost avoidance. Investments proposed will allow the GNWT to temper escalating costs in the following areas:

- Addictions treatment
- Child welfare and foster care
- Social costs of treating/supporting FAS and FAE clients

Increased community involvement in supporting residents to cope successfully with the stress of new employment patterns will ultimately be more effective than centrally designed and delivered programs. Pilot projects will lead to community delivery approaches that can be used by all impacted communities.

Investments will also prevent the following:

- Increased levels of sexually transmitted diseases (STD)
- Increased levels of FAS and FAE births
- Increased incidence of alcohol-related crimes
- Increased incidence of spousal assault
- Increased incidence of child abuse and neglect

Strategy #10: Monitor Biophysical and Socio -economic Env ironments

Establish a monitoring and mitigation regime for both biophysical and socio-economic environments, with accepted standards and remediation requirements, reporting requirements, consequences for non-compliance and incentives for enhanced performance.

Current Status

Development of non-renewable resources must address the impact on the northern environment. To do this effectively there have been recent efforts to establish legislation, strategies, plans and practices that are supported by all stakeholders, and consistent and predictable in their application. Of equal importance is consideration of the implications of development on the economic and social structure of northern communities.

The following is a brief recap of recent efforts to address these interests as well as the gaps that still need to be addressed:

- *A Legislative Basis:* The recently enacted *Mackenzie Valley Resource Management Act* establishes new guidelines for the sharing of decision-making responsibility for resource development with Aboriginal organizations. The legislation along with the boards that are established through the legislation increases the role that northerners play in monitoring the environmental impacts of development. Together with the *Canadian Environmental Assessment Act* there is now a system for ensuring the cumulative effects of projects are determined during the environmental assessment process. Implementation of a cumulative-effects assessment and monitoring system will also assist regulators and developers in the use of adaptive management techniques.

- *Impact of the West Kitikmeot/Slave Study:* Until the West Kitikmeot/Slave Study, monitoring the effects of non-renewable resource development tended to be site-specific. The need for a clear and well-defined cumulative effects assessment and management framework for regions experiencing development pressures has now been recognized and supported during public consultations on other northern development projects. When implemented correctly, the result can be the sound management of the cumulative environmental and socio-economic effects from existing and future development in a region.

- *Standards of Practice:* Standards and practices based on industry best practices, best available technology, research and consultation will be required. Industry is demanding certainty with respect to the standards and practices that they are expected to comply with. Once an acceptable level of certainty is provided, industry will have the confidence to invest significant financial resources in non-renewable resource development based on their own risk-benefit analyses. The GNWT will require the capacity to support and participate in the regulatory and standards-setting processes both before and after project approval.

- *Reporting Requirements:* Ensuring consistency with other reporting and monitoring initiatives will require consultation with Aboriginal governments and communities. Research at the regional and community level may also be needed before benefit reporting can be integrated across the NWT.

- *Ongoing Monitoring Programs:* Under environmental assessment legislation, an environmental and socio-economic monitoring program can be required as a condition of project approval. The purpose of the monitoring program is to verify predicted impacts and to allow adaptive management of unexpected effects.

Required Action and Investment

Several initiatives are required to ensure there is a coordinated plan to implement the new legislation and to ensure the review bodies have adequate levels of information in advance of making development related decisions. The following actions are recommended over the next four years:

- *Compile Baseline Data:* This baseline research investment reflects the cost of a multi-partner fund to be applied to baseline and cumulative-effects research in the Deh Cho, Sahtu and Inuvik Regions. Adequate baseline data will provide the necessary information for decision-making, environmental and cumulative impact monitoring, and will support efforts for mitigation and remediation of development impacts. It is expected that a model similar to the West Kitikmeot Slave Study would be used to establish a funding base for this initiative. In particular, it is expected that the federal government, the territorial government and industry would all contribute to a fund to support this project. Depending upon the amount of support garnered from industry, and further analysis required, preliminary estimates are for $8 million in costs to government over the four-year period.

- *Socio-economic Monitoring:* Community socio-economic monitoring investment reflects the cost of community surveys to provide data for territory-wide tracking and management of socio-economic effects. Also, on-site socio-economic monitoring investment reflects the costs for collection, analysis and reporting of site-specific socio-economic impacts. It is expected that the costs for all aspects of this project will be $2 million over four years.

- *Cumulative Effects Monitoring:* There is an ongoing requirement to support cumulative effects monitoring in the Deh Cho, Sahtu and Inuvik Regions on a phased-in basis in response to oil and gas activity in the Mackenzie and Liard Valleys. This monitoring also needs to be implemented immediately in the Slave Geological Province. The costs for this project are $4.8 million over four years.

- *Air Quality Legislation and Standards:* Currently the legislation and standards regarding air quality in the NWT are inadequate. There is a need to research other jurisdictions, consult with northerners and establish standards for emissions and air quality in the NWT. This research and legislative/policy work is expected to result in $300,000 over the four-year period.

- *Environmental Assessment:* It is expected that as the number of development requests increases over the next few years there will be increased workloads for both regional field staff and other specialists to review project applications. Staff and consulting support will be required to ensure professional reviews are conducted in a timely manner. Costs of $1.9 million over four years are expected.

Required Investment

Year 1	Year 2	Year 3	Year 4
$4,000,000	$4,000,000	$4,000,000	$5,000,000

Current GNWT Investment

Prior Years	Year 1	Year 2	Year 3	Year 4
	$925,000	$550,000	$550,000	$550,000

Payback and Results

Gathering baseline data and establishing an environmental and socio-economic monitoring regime is an investment that will:

- support better coordination of data collection among federal, territorial and Aboriginal government agencies and industry,
- ensure that thorough and accurate environmental baseline data is available as a starting point for impact monitoring,
- identify gaps in existing monitoring programs,
- provide the basis for a better understanding of cause-effect linkages related to development activities,
- facilitate the establishment of regional and site-specific thresholds and carrying capacities,
- ensure timely and consistent reviews of project proposals,
- address communities' concerns about their ability to understand and cope with the impacts of large-scale resource development,
- provide opportunities for northern residents to become more directly involved in monitoring activities.

Strategy #11: Support Planning and Designation of NW T Protected Areas

Support the planning and designation of NWT Protected Areas by:

- Providing information on areas of cultural and ecological value in a GIS database.
- Identifying candidate protected areas in cooperation with local communities and regional organizations and in consultation with non-renewable resource interests.
- Completing the background research needed to formally designate appropriate protected areas.

Current Status

Canada and the NWT have committed to a NWT Protected Areas Strategy intended to balance conservation and development. This commitment came as a result of public criticism over the pace of diamond-staking activity in the absence of any plans for a system of protected areas. The underlying purpose of the strategy is to identify representative and outstanding areas of cultural and ecological importance. Knowledge of the location and character of these areas was deemed critical to the planning of non-renewable resource developments. Protected areas are also the key attractions in tourism development linked to nature and culture.

Planning for a system of protected areas is not done to prevent development but rather to maintain important values and encourage development in alternative areas. A part of the process to evaluate protected areas includes a resource assessment of commercial potential that could be affected positively or negatively by area designation. A clear idea of what areas are significant and where these are located is essential to integrated resource planning and to providing further certainty for resource developers. This knowledge will improve the design of pipeline and road corridors. In the long term, a road system can lead to improved protected area management and compatible tourism development.

The strategy was developed jointly by governments, Aboriginal organizations, industry and environmental groups. The decision to advance protected area proposals generally rests with community and regional organizations but governments, environmental groups and industry are encouraged to undertake research and suggest priority areas. Some of the work already undertaken under the Protected Areas Strategy, such as the report on culturally important sites in the Sahtu Region, will be invaluable to pipeline, road and protected area planning.

The current capacity of communities and regional organizations to consider potential protected areas is very low, particularly when faced with a wide range of competing issues to contend with. These communities will not be able to effectively anticipate or respond to the scale and pace of potential pipeline development in the Mackenzie Valley. The major tasks will be gathering and preparing new and existing research material for use by all groups involved with protected area planning.

Research/Strategic Documents Referenced

The NWT Protected Areas Strategy
Report of the Sahtu Heritage Places and Sites Joint Working Group

Required Action and Investment

Currently the GNWT is investing approximately $200,000 in protected area planning for the entire NWT, much of which is devoted to staff salaries. This is adequate to provide basic coordination of community initiatives. It is not sufficient to provide a systematic plan in a five-year timeframe. Presuming that basic information on wildlife, plants, landform and water systems are gathered through other research initiatives, an additional $300,000 is required to provide for on-site research, communication, community project proposals and public relations. This figure would increase to $500,000 in subsequent years as some areas moved from planning to detailed design and establishment.

The conservation initiatives combined with development achievements can together promote the image of the NWT as a modern, progressive area.

Year 1	Year 2	Year 3	Year 4
$500,000	$500,000	$700,000	$700,000

Current GNWT Investment

Prior Years	Year 1	Year 2	Year 3	Year 4
	$200,000	$200,000	$200,000	$200,000

Payback and Results

- Establishment of a system of protected areas in the NWT that will address priorities of Aboriginal groups, governments and environmental stakeholders.
- Better information on resource potential of designated areas.
- Protection of natural and cultural resources.
- Reduced opposition to large-scale development proposals once protected areas have been designated.
- Enhanced tourism opportunities.

Strategy #12: Mitigate Community Services and Infrastructure Pressures

Ensure appropriate community services and infrastructure developments are in place to accommodate increased pressures from development, through the following actions:

- Address urgent capital infrastructure requirements needed to keep pace with the rate of growth in communities impacted by non-renewable resource development projects
- Begin training community-based delivery staff in the areas of impact assessment, facilitation, consensus-building and negotiation and mediation skills.
- Develop and deliver councillor orientation in all NWT regions.
- Develop alternative financing options for community infrastructure, in consultation with communities.

Current Status

Rapid changes in the communities of the Northwest Territories are anticipated with the 'boom' in the energy sector.

Price Waterhouse Cooper's *Comprehensive Community Plan For Fort Liard* stresses that that gas exploration and extraction activity places greater demands on municipal programs and services.

As a component of the Mackenzie Valley Development Planning Project, undertaken in 1999/2000, a post-development analysis was undertaken to assess the impacts of the rapid development of the gas industry on the community. In particular, the following community capital works and infrastructure were significantly impacted:

- fresh water provision,
- solid waste treatment,
- sewage disposal,
- housing stock and supply,
- telecommunications network,
- supply of commercially zoned land,
- transportation facilities:
- municipal roads,
- territorial highways,
- airport and barge landing facilities.

Inuvik is another community in the NWT that will experience a significant impact on its municipal program and services. This assumption is based on:

- the degree of exploration activity in the Mackenzie Delta (a total of $75.5 million paid for exploration rights on four parcels of land in April, 2000 and over $466 million awarded on land parcels in August, 2000).

- demonstration of confidence by the Mackenzie Delta Producers after announcing a feasibility study in February 2000 that they will be investigating the feasibility of getting their gas to market. The Producers have also indicated that they are looking at such things as developing a processing plant in Inuvik.

The Price Waterhouse Coopers study *Mackenzie Delta Energy Development Business and Employment Opportunities* cites the July 1984 Final Report off the Environmental Assessment Panel (EAP), of the Federal Environmental Assessment Review Office on Beaufort Sea Hydrocarbon Production and Transportation, as containing some interesting information for consideration. The EAP report provides population estimates based on the effects of the construction of a large-diameter pipeline, projecting that Inuvik's current population of 3,000 might increase by 15,000, to 18,000, or more within 10 years of the start of such a project. Based on data in the same report, a significant decrease in the population of Inuvik would probably occur at the end of the construction period.

Preliminary investment estimates in Inuvik are based on a permanent population increase of 2,000 people.

Similar impacts can be anticipated in the Sahtu, Deh Cho and Beaufort-Delta regions, especially with the potential for increased natural gas exploration and pipeline construction. There is still some uncertainly about exactly where the pipeline willl be built and which communities will be best situated to act as service centres during the construction phase. However, as discussed in the Praxis Inc. study *Growth Management In The Northwest Territories: A Discussion Paper for MACA*-GNWT, it is safe to say tthat as a result of this development, changes in population will definitely occur in service centres. With population increases, there will be additional demands on municipal programs and services.

Finally, although not reflected in the immediate investments required, it is anticipated that in future years there may be additional infrastructure investments required to keep pace with the pressure on health care facilities.

Research/Strategic Documents Referenced

Price Waterhouse Coopers, *Mackenzie Delta Energy Development Business and Employment Opportunities*, February 2000

Price Waterhouse Coopers, *Comprehensive Community Plan For Fort Liard (Draft)*, March 2000

Praxis, Inc., *Growth Management in the Northwest Territories: A Diiscussion Paper for the Department of Municipal and Community Affairs, Government of the Northwest Territories*, January 2000

Required Actions and Investment

The proposed investments are as follows:

- $500,000 per year to support infrastructure planning, orientation and training of community governments, and development of alternative financing approaches. An immediate investment will be made to develop a model to determine population increases as a result of the oil and gas development.
- An additional $9.5 million over four years to address expected infrastructure requirements due to increased demands caused by development activity. Anticipated projects include:

Project	Total Cost	Timing
Water Supply-Inuvik	$2,000,000	Year 3
Water Storage-Inuvik	$1,200,000	Year 4
Municipal Road Upgrade – Fort Liard	$550,000	Year 1
Land Development – Fort Liard	$950,000	Year 3
Industrial Waste Storage Site – Fort Liard	$800,000	Year 2
Sahtu Deh Cho and Beaufort-Delta regions (excluding Inuvik)	$1,000,000/yr	Years 1,2,3,4

Inuvik

The two projects identified below have been included as required investments, but do require further study.

Water Supply: Summer water demands may close in on the capacity of the existing water supply lake, necessitating the construction of a water intake into East Channel (Mackenzie River); a permanent intake/pumphouse facility could cost in the order of $2 million.

Water Storage: The single tank system and volume should be doubled by the addition of a 500,000 gallon tank costing up to $1.2 million.

The following two projects have not been identified as required investments in the first four years, but will be required at some point. Again, further study is required.

Water Treatment: Expansion of the water treatment plant to reduce the high turbidity of the Mackenzie River in the summer could cost $3.5 million. Expansion of the waste heat system in the NWTPC Powerplant that provides heat to the treatment plant could cost upwards to $1.5 million.

Sewage Lagoon: At least $3 million would be needed for a mechanical sewage treatment plant and associated facilities.

Fort Liard

Municipal Road Upgrade: Priority identified in PWC Comprehensive Community Plan

Land Development: Priority identified in PWC Comprehensive Community Plan

Industrial Waste Storage Site: Priority identified in PWC Comprehensive Community Plan

Sahtu, Deh Cho and Beaufort -Delta Regions (excluding Inuvik)

Funding, averaging $1 million per year, will be allocated based on population projections as a result of emerging development schedules and will focus on areas impacted by development.

Total Required Investment

Year 1	Year 2	Year 3	Year 4
$2,050,000	$2,300,000	$4,450,000	$2,700,000

Current GNWT Investment

The GNWT's current five-year capital forecast projects $68 million will be spent on community infrastructure during the four-year period of this strategy. However, that amount does not accommodate the incremental needs caused by development activities. As the GNWT has attempted to address its deficit position by deferring much-needed capital expenditures for the 2000-2001 fiscal year, there is no capacity within our capital budget to add these projects at this time.

Prior Years	Year 1	Year 2	Year 3	Year 4
$ 60,000	$ 0	$ 0	$ 0	$ 0

Payback and Results

- Developed land will be available to accommodate industrial and business expansion.
- Health and well-being of community residents will be protected through adequate water and waste management services.
- Lack of adequate services and infrastructure could act as a deterrent to industry.
- Training and planning will ensure development proceeds with minimal negative impacts.

Strategy #13: Promote Maximum Employment of Northerners

Promote maximum employment of northerners by:

- Compiling and providing detailed, accurate and current labour force information to industry, and maintaining a database of job skills and business potential at the regional and community level.
- Providing career and counselling support services in communities.
- Ensuring standards and expectations for industry labour force development plans are clearly articulated.
- Encouraging regional development corporations, Aboriginal groups and industry to work with neighbouring regions to recruit northern staff.
- Supporting a flexible, mobile workforce by working with industry and communities to ensure workers in remote communities are able to access employment opportunities by reducing or eliminating transportation barriers.

Current Status

In order to ensure that the NWT population is equipped to take maximum advantage of employment and training opportunities, the GNWT must not only provide programming to close the "skills gap" that will prevent residents from obtaining employment, but must also take measures to ensure that available workers are matched with existing opportunities. While industry has a responsibility to promote opportunities and seek out northern employees, the GNWT also has a role to play in addressing the unique challenges posed by a dispersed, inexperienced labour force.

Required Action and Investment

Compiling labour force information: Experience in the diamond industry has shown that there are significant benefits in supporting industry and communities by compiling job skills information. The GNWT currently has a labour market analyst position that can provide some of the information required. However, more resources are required to develop a comprehensive database and maximize the opportunities.

Career Counselling: Career counselling is another area exhibiting proven benefits. Services are currently provided to communities through career centres, however restricted staffing and budgets restrict access to the service for remote communities. There is an identified need for three career counselling positions in the regions.

A flexible, mobile workforce: One of the major challenges for northern workers is travel. People in most regions of the NWT have limited options for travelling to work sites that are outside of their home community. Many communities do not have roads or at best have a winter road connection for a few months each year. Some of these same communities do not have scheduled air services and must rely on air charters or other arrangements for outside travel. These conditions, combined with the high costs for air travel, all present significant barriers to employment for northern workers in the resource sector.

Companies, governments and regional development corporations in the north have undertaken various measures to ensure northerners are able to adapt to these circumstances through such interventions as transportation subsidies, flexible rotation cycles, a broader range of pick-up points, on-the-job training programs etc, Broader employment participation in the resource sector will require an increased emphasis on these key areas.

Year 1	Year 2	Year 3	Year 4	Total
$1,104,000[1]	$1,104,000	$1,304,000	$1,304,000	$4,816,000
1. includes labour market analysis, database redevelopment and distribution, career counselling staff, O&M				

Current GNWT Investment

Prior years	Year 1	Year 2	Year 3	Year 4
$924,000	$729,000	$729,000	$729,000	$729,000

Research/Strategic Documents Referenced

NWT Labour Force Development Plan

1999 NWT Labour Force Survey

Payback and Results

With the potential for up to 2,000 jobs being created by non-renewable resource development, facilitating northern employment will have significant payback in the form of reduced income support and employment insurance programs. Experience to date has shown a 30% reduction in income support programs in the Fort Liard region, near full employment, as well as up to 100 workers employed from other regions, many assisted through GNWT-supported transportation programs.

The availability of a community-based labour force database will provide employers with access to worker availability and workers with the opportunity to be identified as available for work. Ongoing labour market analysis will provide current, reliable information.

Incremental career counselling resources will provide increased capacity for outreach to isolated communities serving an additional 600 clients.

Strategy #14: Provide Support to Small Business

Provide support to small business by enhancing the following existing programs:

- Community Futures capital pool: a capital pool primarily set up to provide loans, administered through regional boards with community representation, to allow new organizations to establish base capitalization.
- Business Development Fund: a contribution and grant program offering grants to micro businesses and contributions to potential and existing businesses for a variety of initiatives, ranging from pilot projects to business start-ups and expansion to community initiative projects.

Current Status

The GNWT for more than three decades has provided a variety of business assistance programs, including grants to micro business, and business contributions and loans. Currently, the GNWT supports the Community Futures Program and the Business Development Fund with over $3 million per year in funding.

March 31, 1999 saw the sunset of the Northern Employment Strategy that provided development funding of $17 million to northern businesses over two years. This has left a critical shortfall in the funding necessary to properly assist in placing northern companies in a competitive position to assume a key role in future development. This is particularly true in the more remote communities. The funding and actions identified below will ensure that start-up and future growth needs are met.

Required Action and Investment

The current funding of $3 million per year is not sufficient to take advantage of impending development and to maximize benefits for northerners. The following actions and funding are required:

- $5 million to be distributed to the Community Futures Program in five NWT regions. This funding would be used to enhance the loan capital pools of these five organizations, making money available for development initiatives, as determined by regional and community representatives.
- $4.5 million to be made available in the form of grants and contributions through the Business Development Fund.

The Community Futures Program, originally an initiative of the federal government, has been supported and expanded by the GNWT from two to six regional organizations. The regional and community focus is seen as the strength of this program.

The Business Development Fund encompasses a wide range of initiatives. Aside from assisting potential and existing businesses with pilot projects and business start-up and expansions, there is a component for community-initiated infrastructure projects that can facilitate economic development.

One proposed example of a required infrastructure project is public access to the Internet in northern communities. With the completion of the Digital Communications Network, all northern communities have Internet capability. However, due to lack of economies of scale,

there are still 26 communities without public access. To facilitate this, a one-time investment of $900,000 is required, along with continued support of $625,000 per year. Aside from connecting communities to the world and the enhanced educational possibilities, this investment would assist business through e-commerce, etc.

Year 1	Year 2	Year 3	Year 4
$12.5 million	$12.5 million	$12.5 million	$12.5 million

Current GNWT Investment

Prior Years	Year 1	Year 2	Year 3	Year 4
$30 million	$3 million	$3 million	$3 million	$3 million

Payback and Results

Based on evaluation of the impacts of the two-year Northern Employment Strategy, it is estimated that $12 million invested in small business support could have the following results:

- Facilitate development and maximize employment opportunities for northerners, as identified in Appendix D.
- Leverage $38 million in capital investments.
- Contribute to the purchase of $10 million in NWT goods annually.

The northern economy stands to gain a great deal by investing in today's potential. Sustainable development and growth will produce increased government revenues through business and personal taxes over an extended period, far exceeding the modest initial investment. The payback will be primarily from resident northerners and not from transients who enter and leave without contributing to the economy.

Strategy #15: Promote Secondary (Value -Added) Industry

Promote secondary (value-added) industry through the following actions:

- Undertake research and consult with industry to identify most effective opportunities
- Develop a policy framework for secondary industry support
- Identify and implement start-up programs
- Identify and implement other support programs as indicated by consultation and research.

Current Status

For NWT residents to attain maximum benefits from development, it is essential that they play an integral role in the decision-making process with respect to that development.

The GNWT has already made a substantial investment in promoting the secondary diamond industry, and has supported Aboriginal organizations in becoming partners. A continued investment will be required as Diavik and other new mines come on stream and additional value-added production facilities are needed.

In addition to the direct investment of $5 million to support and promote value-added diamond initiatives, the GNWT has also approved over $20 million in loan guarantees to three companies establishing operations in Yellowknife.

Resource development expenditures are estimated to exceed $7 billion in the next decade, ($3 billion for a Mackenzie Valley pipeline, $2 billion for diamond mines and $2 billion for other oil and gas exploration and development). With the prospect of Alaskan gas being transported down the Mackenzie Valley, this figure is considered conservative. Given the potential for the oil and gas industry, and the benefits realized from current levels of investment, continued research and support of value-added industries should receive a high priority.

Research/Strate gic Documents Referenced

Policy Framework – GNWT Support to Diamond Manufacturing Industry
Terms of Reference for Value Added-Activities in the Oil and Gas Sector

Required Action and Investment

Examples of previous investment in the secondary diamond industry are as follows:

- $1 million advanced in loans
- $1.5 million contributed toward training initiatives
- $750,000 advanced as non-repayable contributions
- $1.5 million to establish a diamond division to coordinate activities

Continued investment in the secondary diamond industry is essential, as Diavik is coming on stream in 2002. There will be a requirement for additional value-added production facilities.

Promote Secondary Industries

Aside from ensuring the continued success of the secondary diamond industry, a great deal of study is required to examine the potential of secondary oil and gas industry. Examples of required investments include:

- general research into potential secondary industries
- assess the feasibility of refining petroleum products
- assess the feasibility of manufacturing gas liquids
- research the potential development implications of having access to natural gas all along the Mackenzie Valley, i.e., this fuel could facilitate the development of smaller pools and mineral deposits
- assess the feasibility of enhancing the NWT lumber industry through a gas-fired kiln, enabling the NWT to produce first-grade forestry products

There is a wide range of issues to be researched – from central planning and the consideration of the overall development and potential, to potentially studying the feasibility of a small sawmill operation in Nahanni Butte. The required funds identified below should be considered the minimum required investment.

Year 1	Year 2	Year 3	Year 4
$2.5 million	$2.5 million	$2.5 million	$2.5 million

Current GNWT Investment

Prior Years	Year 1	Year 2	Year 3	Year 4
$5 million	$1 million	$1 million	$1 million	$1 million

Payback and Results

GNWT initiatives with respect to the secondary diamond industry demonstrate the results that can be achieved with planning and pro-active investment. The secondary diamond industry has resulted in 100 full-time jobs to date. This trend is expected to continue as new mines come on stream and new cutting and polishing facilities become operational.

Jewellery making is an obvious next step in taking advantage of the diamond industry. In addition to the benefits of job creation, it has the added advantage of lending itself to the establishment of a cottage industry.

Tourism is expected to increase as interest in diamond activities and "northern-certified" diamonds and jewellery increases.

To maximize the benefits of oil and gas development, investment is required now to study all potential opportunities. While specific benefits are difficult to quantify without further study, experience has shown the benefits of maximizing all opportunities.

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Strategy #16: Leverage Infrastructure through Partnerships

Maximize the benefits of infrastructure development to the Northwest Territories by the following actions:

- Promote concurrent development of roads and pipelines in the Mackenzie Valley by encouraging the oil and gas and pipeline companies to take advantage of the economies of scale involved in concurrent construction.

- Work to leverage partnerships with resource development companies in the upgrading of the existing winter roads and future construction of all-weather roads.

- Work with the provinces to increase their awareness of the benefits they receive from northern developments. As the NWT imports most services, equipment and expertise, only 26 percent of the employment benefits of road and resource developments in the NWT accrue to the NWT. The remaining 74 percent goes to the provinces, with Ontario getting 31 percent, Alberta 20 percent, Quebec 12 percent, and BC 8 percent.

- Maximize the local and northern business and employment opportunities from infrastructure construction contracts.

- Promote creation of northern and Aboriginal businesses in the construction, maintenance and servicing of infrastructure development.

Current Status

The GNWT is currently discussing with Transport Canada potential cost-sharing by the federal government for the reconstruction and paving of the remaining 75 km of Highway 3 between Rae and Yellowknife.

In various discussions with the oil and gas and pipeline companies, it has been pointed out that concurrent development of roads and pipelines will produce significant economies of scale.

The existing Lupin winter road in the Slave Geologic Province is built and operated by private mining interests on a self-financing basis. The potential exists for improvements to this corridor on a partnership basis between federal/territorial governments and the private sector. This option will be further explored over the next few years.

Research/Str ategic Documents Referenced

Summary Report, "Investing in Roads for People and the Economy: a Highway Strategy for the NWT", 2000.

Required Action and Investment

Strategy #7 includes the estimated investment requirements for the development of the needed infrastructure.

To bring the above-mentioned leverages and benefits to fruition, an investment of $500,000 is needed undertake the required research, investigation, evaluation and consultation.

Year 1	Year 2	Year 3	Year 4
0	$100,000	$200,000	$200,000

Current GNWT Investment:

Prior Years	Year 1	Year 2	Year 3	Year 4
0	0	0	0	0

Payback and Results

- Better, cheaper access for resource exploration and development.
- Construction of new roads will provide improved access for communities, decreasing the cost of re-supply and inter-community travel, creating business opportunities, and meeting the social needs of individuals.
- Training of local people in skills directly transferable to oil and gas and mining industries.
- Business development.
- Enhanced tourism.
- Cheaper and safer inter-community travel.

Strategy #17: Support Long -term Wealth Creation through Equity Participation by Northerners

Support long-term wealth creation through northern equity participation in oil and gas infrastructure, through the following actions:

- Provide financial support in the early stages for accessing technical, legal and business advice;
- Undertake research to explore similar arrangements in other jurisdictions and best practices for equity participation;
- Work with industry to facilitate their understanding of the northern business environment; and
- Examine innovative tolling and financing arrangements to help facilitate Aboriginal equity participation in pipeline infrastructure development

Current Status

The Acho Dene Koe First Nation in Fort Liard has been provided with an opportunity to hold an equity position in two pipeline projects in the region. This includes a partnership with the Liard Valley Producers Group, led by Chevron, as well as another partnership with Paramount Resources on the Shiha Pipeline development. Also, the Inuvialuit Regional Corporation is a partner in the Ikhil Gas Project, supplying the Town of Inuvik with natural gas. These three smaller-scale projects demonstrate how Aboriginal organizations can participate and benefit from resource development over the longer term.

Northern Aboriginal organizations throughout the NWT met in Fort Liard in January 2000 to discuss the future of the oil and gas industry in the NWT. At the conclusion of this meeting, the groups passed a unanimous resolution to endorse the development of a major natural gas pipeline from the Mackenzie Delta, through the Mackenzie Valley to southern pipeline infrastructure. The Aboriginal Pipeline Group (APG) has since begun to gather technical information related to the pipeline as well as to acquire business advice on the formation of a northern pipeline consortium.

Preliminary discussions with industry indicate their interest in considering a partnership with northern Aboriginal organizations in the pipeline venture. It is projected that a Mackenzie Valley gas pipeline would cost $3.0 billion to construct, with 2007 being the earliest date for completion.

To date, the GNWT has provided initial start-up funds to support the work of the APG. This includes supporting regional meetings, consultation, and funding for staff to gather background information.

Raising the necessary capital will be the primary hurdle to Aboriginal equity participation in the development of northern pipelines, processing plants and related infrastructure. Aboriginal groups in three of the regions will have access to some capital through their land claim. However the Deh Cho Region has not yet settled a land claim or a Treaty Land Entitlement Agreement and as result has limited access to capital. The Aboriginal Pipeline

Group is in the preliminary stages of researching conventional and non-conventional sources for funds to allow their participation petroleum development ventures.

Required Action and Investment

It is expected there will be a four-year period of preparation leading up to the construction of a pipeline. This will include all aspects of formation of the northern consortium, establishing a partnership with a traditional pipeline interest, undertaking pre-feasibility and a full feasibility studies, preparing a joint business plan, negotiating a contract for transmission with producers, and ultimately filing an application for construction.

The following actions and funding are required to assist the Aboriginal Pipeline Group in becoming an equity participant in pipeline development. It should be noted that this plan is very preliminary and will require further consultation and input from the APG.

Year 1 - $1,200,000: Funding for the first year to assist with organizing initial planning meetings, gathering background information and contributing to the costs of a full-time coordinator to look after the day-to-day operations of the APG.

Years 2, 3, 4 - $500,000: During this period, it is expected that completion of the initial planning will lead to a number of actions aimed at maximizing northern equity participation in development. Such actions may include:

- The legal formation of the APG; this will require legal research and advice on the framework for the consortium.
- Research for a pre-feasibility study and a long-term business plan.
- Exploration and negotiation of partnership possibilities with a traditional pipeline interest.
- Research with respect to a transmission contract, engineering planning of the transmission infrastructure.
- Exploring conventional and non-conventional sources of funds.
- Establishment of a Human Resource Development Plan for the equity partners; this would include a full training program to ensure northerners are prepared to take a central role in the ongoing administration of the APG and its other partners.
- Establishing a permanent operation with an expectation that funding arrangements have been finalized and infrastructure construction is proceeding.

Year 1	Year 2	Year 3	Year 4	Total
$200,000	$500,000	$500,000	$500,000	$1,700 000

Current GNWT Investment

Prior years	Year 1	Year 2	Year 3	Year 4
0	0	0	0	0

Payback and Results

The above investment will result in the identification of numerous requirements and accomplishments to help facilitate the APG in gaining equity participation in the Mackenzie Valley Gas Pipeline. These are

- the most appropriate corporate structure for the group to ensure the maximization of the benefits from participation (tax implications, decision-making procedures)
- the requirements and obligations of APG within the pipeline consortium, including financial structure
- the determination of regulatory requirements of APG
- obtaining financial support for APG from varied sources and through innovative means
- developing a strategic plan for APG, including the identification of partners

Through this initiative, the Aboriginal organizations will have a better understanding of the issues and benefits that will influence their participation in the pipeline project.

The expectation is that the Mackenzie Valley Pipeline will transport gas to southern markets for at least the next 25 years. This undertaking will ensure that northern Aboriginal groups benefit from a significant portion of the wealth that is created from developing this resource.

Strategy #18: Support Balanced Economic Growth

Support balanced growth of the NWT economy by:

- exploring alternative economic approaches
- developing options to divert a portion of non-renewable resource revenues into long-term savings plans
- researching alternative structures to advance this strategy.

Current Status

The Northwest Territories has a wealth of mineral and petroleum resources. However, focusing development exclusively on the non-renewable resource sector will leave our economy vulnerable to world market forces in a small number of commodities. There is a need to ensure that as mineral resources are depleted, a financial legacy is left for future generations. There are opportunities in a broad number of sectors that need continued attention to ensure long-term stability and growth. The long-term health of our economy will be directly related to our ability to maximize the benefits available from a robust resource sector while setting the stage for more balanced growth in other sectors.

Recommendations from the Canada West Foundation in a recent report stress the need for public sector savings to be achieved from resource revenues, and the need to use these savings to create an economic environment favourable to growth. Public savings plans, such as Alberta's Heritage Savings and Trust Fund and the Alaska Permanent Fund, can be used to facilitate micro-investment strategies to promote economic diversification.

The need to explore economic alternatives and invest in the future has also been highlighted in the report of the NWT Economic Strategy Panel. Ideas put forward in this forum have included the establishment of a research institute to support creation of alternative economic approaches.

The NWT can benefit from experience in other jurisdictions. Research is required to review best practices, to determine the most effective approaches, and to identify priorities for micro-investment. Any approach to investment of resource revenues in a public savings fund will have to be developed in partnership with Aboriginal governments.

Research/Strategic Documents Referenced

Cut and Polish: Development Strategies for the NWT – Canada west Foundation

Common Ground: Economic Strategy Report of the NWT Economic Strategy Panel

Required Action and Investment

Work to be undertaken over the next four years will include:

Research similar approaches used by other jurisdictions and identify best practices: $500,000

Develop options for institutional structures: $300,000

Consult with Aboriginal governments and stakeholder groups, and make funds available for research and proposal development by third parties: $500,000

Establish appropriate programs and/or bodies and provide start-up funding: $2,000,000

Year 1	Year 2	Year 3	Year 4
$500,000	$500,000	$1,000,000	$1,300,000

Current GNWT Investment

Prior years	Year 1	Year 2	Year 3	Year 4
0	0	0	0	0

Payback and Results

The outcome of this investment will be a plan of action to divert a portion of NWT resource revenues into legacy trusts or other appropriate avenues that will provide funding to support the development of economic alternatives in a number of areas. Results might include:

- identification of new business opportunities in the high-tech industry
- expanded use of the information highway for ecommerce, as a way to bypass the northern barriers of distance and cost
- improved tourism opportunities
- establishment of value-added business, e.g. arts and crafts incorporating diamonds
- identification of new business opportunities that can take advantage of the long-term, reliable energy source created by tapping into natural gas reserves
- development of alternative energy sources appropriate to a northern context
- adaptation of business practices based on appropriate technical research.

Strategy #19: Feasibility of Natural Gas Conversion for NWT Communities

Conduct feasibility studies and develop an action plan for ensuring access to natural gas in NWT communities. As an early action to reduce greenhouse gas emissions, undertake a pilot conversion project in the community of Fort Liard.

Current Status

The economy of the NWT is very energy-intensive. About 90% of the energy use occurs in electricity generation, transportation activities and space-heating of building and residences. Approximately 93% of the NWT's energy requirements are met by importing costly fossil fuels from the south – an estimated 425 million litres in 1999. Economically, this dependence on imported fossil fuels exposes the NWT to supply and price risks and, at $0.30 to $0.80 per litre, results in the leakage of millions of dollars from the NWT economy. Environmentally, the combustion of this fuel results in estimated per-capita greenhouse gas emissions of about 27.5 tonnes per year, among the highest rates recorded anywhere in the world.

Recently a pipeline was constructed from the Ikhil field to supply natural gas to the Town of Inuvik. This $32 million dollar project included the construction of a 30km pipeline, conversion of the community power plant, conversion of boilers for government and institutional facilities as well as the conversion of a number of residences to natural gas. It is expected the overall capital outlay for this project, including a reasonable rate of return on the investment, will be recovered within the estimated 15-year life of the gas field.

In 1998, the world's developing countries agreed under the Kyoto Protocol to significantly reduce emissions of greenhouse gases. Canada agreed to reduce its national emissions by six percent below 1990 levels by 2013. As a result, energy and environment ministers established a process to ensure full participation of federal, provincial and territorial governments in developing a national climate change strategy. A draft of the national strategy is expected to be presented to ministers at their fall 2000 meeting.

The potential disruption of the north's natural environment by greenhouse gas emissions has compelled the Government of the Northwest Territories to support global and local actions to reduce these emissions, which are believed to cause harmful climate change. As a result, the Northwest Territories is developing a strategy to control greenhouse gas emissions. Specific objectives include:

- Identification and coordination of northern actions to control greenhouse gas emissions, and
- Developing and contributing a northern perspective as part of Canada's national Climate Change implementation strategy.

The potential development of gas reserves in the NWT provides an opportunity for communities in the area to benefit from the proximity to those resources. The wholesale conversion of communities to natural gas can be expected to significantly reduce greenhouse gas emissions as well as energy costs.

The GNWT has undertaken a study of the potential to provide gas to NWT communities that are either in proximity to a pipeline right-of-way in the Mackenzie Valley or are relatively close to an existing natural gas well. Phase one of the study is to review the experience of the Inuvik Gas Conversion Program, review similar initiatives in southern Canada and outline policy options.

Research/Strategic Documents Referenced

InterGroup Analysis of Natural Gas Distribution Options (work in progress)

Required Action and Investment

As discussed above, the first phase of the study is underway and will cost $60,000.

The development of a comprehensive action plan for conversions throughout the Mackenzie Valley will be undertaken in years 2 and 3 at an expected cost of $65,000 per year. This action plan will provide a schedule for construction of a series of community laterals and community conversion for each location. As well, the action plan will provide estimated construction and conversion costs.

At the same time as this planning exercise is being undertaken, a pilot project will be initiated to construct a pipeline from the F 36 well south of Fort Liard into the community. This project will include construction of the pipeline, conversion of the power plant, construction of a municipal distribution system and domestic/institutional conversions. It is expected that the GNWT will be expected to contribute $400,000 toward the cost of this project. This project will be undertaken in Year 2 with a technical evaluation being initiated in Year 4.

Year 1	Year 2	Year 3	Year 4
$85,000	$465,000	$65,000	$50,000

Current GNWT Investment

Prior Years	Year 1	Year 2	Year 3	Year 4
$0	$60,000	$0	$0	$0

Payback and Results

This work will result in the full conversion to natural gas for the community of Fort Liard. This project will be undertaken in partnership with the NWT Power Corporation, the Band, natural gas producer in the area, residents of the community and Acho Dene Koe Holdings Ltd. This conversion will result in a reduced dependence on imported diesel fuel and a significant reduction in greenhouse gas emissions.

A second result of this project will be the preparation of a detailed plan for multi-community natural gas conversions. This detailed plan will ensure potential partners have full planning information and will be in a position to begin the actual conversions in conjunction with the construction of a Mackenzie Valley Pipeline.

Full conversions of a number of Mackenzie Valley communities to natural gas could result in the reduction of total NWT greenhouse gas emissions by 5% to 10%. It is further expected that costs of fuel for northern communities will be substantially reduced.

Appendix D
Employment Impacts of Non-Renewable Resource Projects

Background

The overall employment impacts of non-renewable resource development in the Northwest Territories depend, in part, on which of several potential resource development projects proceed.

The development strategies drew upon the potential employment and fiscal impacts of the following development projects:

Pending/Potential Operations:	*Current Operations:*
Fort Liard natural gas	Norman Wells oil
Mackenzie Delta natural gas	Ekati diamond mine
Mackenzie Valley pipeline	Giant/Con gold mine
Diavik diamond mine	
Winspear diamond mine	

Currently operating projects are not included in incremental employment impacts, but are included in fiscal impacts assessment in Appendix B.

Other potential development projects not considered in the employment impacts are as follows (although some or all of these projects could also proceed in the medium term):

Cameron Hills gas
Norman Wells gas
Further development of Fort Liard gas
Oil developments in the Beaufort, Sahtu and Cameron Hills
Fourth diamond mine

Summary of Impacts

Many of the projects are in the early stages of planning, so relatively little definite information is available. For example, the exact location and diameter of the pipe could significantly affect employment impacts of a pipeline development.

However, based on studies by Price Waterhouse Coopers, the Canadian Energy Research Institute, and information from within the GNWT the following assumptions were made about the direct employment impacts from expected non-renewable resource development in the Northwest Territories.

Project timing will influence average annual construction employment and when operational jobs begin. For the employment information presented here, the construction phase of each project is assumed to take place before 2010. Under the current assumptions, employment in peak years could be as high as 2,500 jobs. As more detailed information becomes available for each project, these employment estimates can be revised.

Estimated Total and Annual Average NWT Direct Employment for Construction and Operations		
Phase	Total	Annual
Construction	12,086	1,511
Ongoing Operations		837

The estimated direct employment impacts presented above reflect full-time equivalent employment (full-year/full-time). Given the seasonal and compressed nature of some construction activities, the total number of individuals required for these projects may be significantly larger (for example, some may only be employed for the winter drilling season). Considering seasonal employment, an average of some 2,500 individuals could be employed per year during the construction phase, with peak employment involving as many as 4,000 workers.

For direct employment estimates construction includes all development activity and these jobs would presumably end when the projects go into production. Employment related to ongoing operations would commence when the project goes into production. The estimated 837 jobs for operations should be in place by 2010, although some projects may begin production as early as 2003. Ongoing operations employment should last for approximately 20 years.

Further, direct employment will result in indirect and induced employment impacts (see definitions at the end of the section).

When estimating overall the employment impacts of non-renewable resource development, consideration needs to be given to how much of the employment NWT residents will be able to fill. Existing labour supply and skill requirements mean that not all jobs will be filled by territorial residents. However, increased training opportunities and project timing can influence the proportion of jobs filled by locals.

Estimated Total Annual NWT Employment for Construction and Operations			
Phase	Direct Employment	Indirect/Induced Employment [1]	Total Employment
Construction	1,511	385	1,895
Ongoing Operations	837	177	1,014

[1] Estimates of indirect and induced employment effects are based on the NWT Input-Output Model and use the most current information released by Statistics Canada for the structure of the NWT economy.

Terms and Definitions

The Bureau of Statistics' Input-Output (IO) model is a structural model of the Northwest Territories economy (separate from Nunavut). The core of the IO model is a set of three tables (Input, Output and Final Demand) which present the most detailed accounting of the NWT economy available. The tables together detail the supply and disposition of individual

commodities and the commodity composition of the output of industries, and the complete costs of production of industries.

The industry and commodity dimensions of the tables are highly disaggregated – 679 commodities and 243 industries – although fewer are represented in the NWT. The tables comprise detailed information obtained from Statistics Canada's surveys of establishments and enterprises.

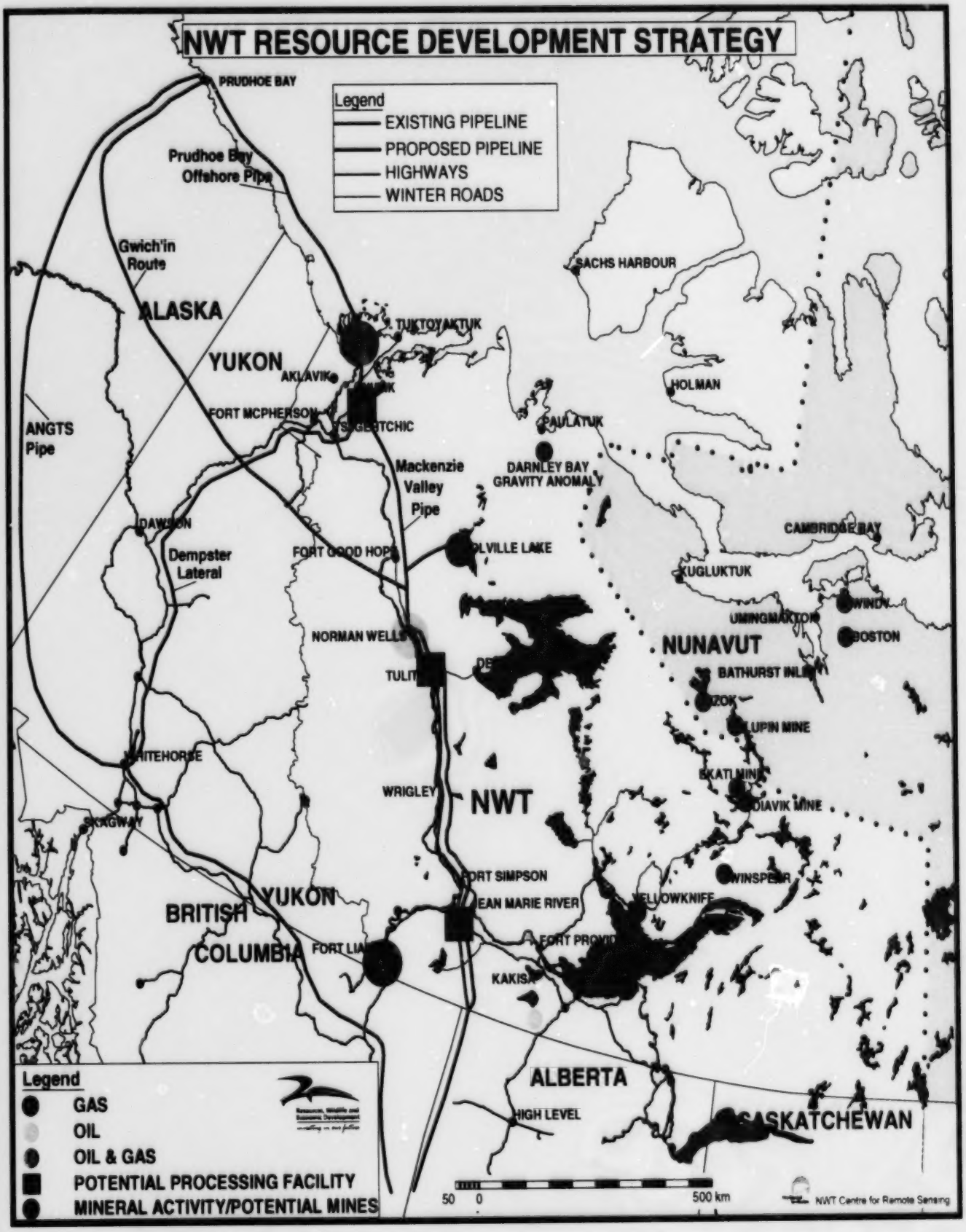
The objective of an IO model is to estimate the total economic impact of a project, by calculating estimates of direct, indirect and induced impacts associated with the project. Based on the observed inter-connection between industries in the economy, the cumulative demand is traced through these industrial linkages to yield a set of aggregate impacts.

Direct Employment Effects are the employment resources (inclusive of contracted resources) purchased by a proponent to meet its production needs.

Indirect Employment Effects are ripple effects that occur when the proponent buys inputs from other firms, and those firms expand employment to meet demand.

Induced Employment Effects represent the increased employment required to meet increased household demand for commodities that is generated by the increased labour income (net of taxes and savings) associated with the increased production.

Appendix E
NWT Non-Renewable Resources Map


NWT RESOURCE DEVELOPMENT STRATEGY
Legend
EXISTING PIPELINE
PROPOSED PIPELINE
HIGHWAYS
WINTER ROADS
PRUDHOE BAY
Prudhoe Bay Offshore Pipe
Gwich'in Route
ALASKA
YUKON
ANGTS Pipe
Mackenzie Valley Pipe
Dempster Lateral
DAWSON
FORT MCPHERSON
AKLAVIK
TUKTOYAKTUK
SACHS HARBOUR
HOLMAN
PAULATUK
DARNLEY BAY GRAVITY ANOMALY
CAMBRIDGE BAY
KUGLUKTUK
UMINGMAKTOK
BOSTON
NUNAVUT
BATHURST INLET
LUPIN MINE
NORMAN WELLS
TULITA
WRIGLEY
NWT
WHITEHORSE
SKAGWAY
FORT SIMPSON
JEAN MARIE RIVER
FORT PROVIDENCE
YELLOWKNIFE
WINSPEAR
DIAVIK MINE
BRITISH COLUMBIA
YUKON
FORT LIARD
KAKISA
ALBERTA
HIGH LEVEL
SASKATCHEWAN
Legend
GAS
OIL
OIL & GAS
POTENTIAL PROCESSING FACILITY
MINERAL ACTIVITY/POTENTIAL MINES
50 0 500 km
NWT Centre for Remote Sensing